

A Report on the Self-Assessment of Partnerships
in the Newly Independent States
and Central and Eastern Europe

prepared by

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AIHA PARTNERSHIPS

Country, City	US City, State Partners	NIS/CEE Partner Hospitals
HOSPITAL PARTNERSHIPS		
Albania, Tirana	Grand Rapids, MI Butterworth Hospital	University Hospital Center "Mother Theresa," University Maternity Hospital, Central Trauma Hospital
Armenia, Yerevan	Boston, MA Boston University School of Medicine, Boston Medical Center	Emergency Scientific Medical Center
Armenia, Yerevan	Los Angeles, CA University of California at Los Angeles Medical Center	Erebuni Medical Center, Erebuni College of Nursing
Belarus, Minsk	Pittsburgh, PA Magee-Women's Hospital, University of Pittsburgh Medical School	Children's Hospital No. 4, Radiation Medical Institute, Minsk Medical Institute, Maternity Hospital No. 2
Bosnia & Herzegovina, Tuzla	Buffalo, NY Buffalo General Health System	University Clinical Center of Tuzla
Croatia, Zadar	KY, NY, NJ, OH, SC Franciscan Sisters of the Poor Health System, Inc.	Zadar General Hospital, Orthopedic Hospital of Biograd
Croatia, Zagreb	Lebanon, NH Dartmouth-Hitchcock Medical Center	Sveti Duh General Hospital, University Hospital of Infectious Disease, Children's Hospital for Respiratory Diseases
Georgia, Tbilisi	Atlanta, GA Grady Health System, Emory University School of Medicine	Tbilisi City Hospital No. 2, Tbilisi State Medical University
Hungary, V c	Winston-Salem, NC NovantHealth	J vorszky d n (V c Municipal) Hospital
Kazakstan, Almaty	Tucson, AZ Tucson/Almaty Health Care Coalition of Eight Hospitals	Kazak Scientific Research Center of Pediatrics and Children's Surgery, Almaty First Aid Hospital
Kazakstan, Semipalatinsk	Houston, TX The Methodist Hospital, Baylor College of Medicine, General Board of Global Ministries of the United Methodist Church	Oblast Clinical Hospital, Oblast Children's Hospital, Emergency First Aid Hospital, Inter-Oblast Oncology Dispensary, Semipalatinsk Gynecology Center Zhamilya and Kurchatov Diagnostic Center
Kyrgyzstan, Bishkek	Kansas City, KS University of Kansas Medical Center	Institute of Obstetrics and Pediatrics, Institute of Oncology and Radiology
Latvia, Riga	St. Louis, MO Barnes-Jewish Hospital, BJC Health System, Inc., Washington University Medical School	Bikur Holim, City Maternity Hospital, Republic Children's Hospital
Moldova, Chisinau	Minneapolis, MN Hennepin County Medical Center, Abbott Northwest Hospital	Republican Clinical Hospital, City Ambulance Center, Moldova Medical University, Dalila Women's Wellness Center
Romania, Cluj	Philadelphia, PA Thomas Jefferson University	University Hospital in Cluj, The Center for Medical Research, Sanitary Police

AIHA PARTNERSHIPS

Country, City	US City, State Partners	NIS/CEE Partner Hospitals
Russia, Dubna	LaCrosse, WI Gundersen/Lutheran Health System, St. Francis Hospital	Hospital No. 9, Central City Hospital and Bolshaya Volga Hospital
Russia, Moscow	Austin, TX City of Austin/Travis County Emergency Medical Services	Moscow Institute of Continuing Education of the Federal Admin. of Biomedical Problems and Disaster Medicine, Russian Federation, Moscow Oblast Ministries of Health
Russia, Moscow	Boston, MA Brigham & Women's Hospital	Pirogov First Municipal Hospital
Russia, Moscow	Norfolk, VA Children's Hospital of the King's Daughters	Russian Federation Ministry of Health, Institute of Pediatrics and Children's Surgery, Children's Hospital No. 13
Russia, Moscow	Pittsburgh, PA Magee-Women's Hospital	Savior's Hospital for Peace and Charity
Russia, Murmansk	Jacksonville, FL Jacksonville Sister Cities Association & Jacksonville Community Hospitals	Murmansk Regional Hospital, City Ambulance Hospital
Russia, St. Petersburg	Atlanta, GA Georgia Baptist Healthcare System	St. Petersburg Medical University in the Name of Pavlov
Russia, St. Petersburg	Louisville, KY Jewish Hospital Healthcare Services, University of Louisville School of Medicine	Medical Center of St. Petersburg in the Name of Sokolov (formerly Hospital No. 122)
Russia, Stavropol	Des Moines, LA Iowa Hospital Association	Stavropol Regional Hospital, City Hospital No. 4, Stavropol Krai Health Administration
Russia, Vladivostok	Richmond, VA Medical College of Virginia, Virginia Commonwealth University	City Clinical Hospital No. 2, Vladivostok Medical Institute
Slovakia, Kosice	Providence, RI Women & Infants Hospital of Rhode Island, Hasbro Children's Hospital	Faculty Hospital and Polyclinic
Tajikistan, Dushanbe	Boulder, CO Boulder Community Hospital	City Medical Center
Turkmenistan, Ashgabat	Cleveland, OH Cleveland Clinic Foundation	Medical Consultative Center in the Name of President Niyazov
Turkmenistan, Ashgabat	Richmond, VA Richmond Ambulance Authority	Tiz Komek Medical Center
Ukraine, Donetsk	Orlando, FL Orlando Regional Healthcare System	Donetsk Oblast Trauma Hospital
Ukraine, Kiev	Philadelphia, PA Children's Hospital of Philadelphia, University of Pennsylvania Medical School, the Hospital of the University of Pennsylvania	Center for Maternal and Child Health Care of the Left Bank
Ukraine, Kiev	Brooklyn, NY Coney Island Hospital, New York City Fire Department	Ministry of Health and Emergency and Disaster Medical Training Center

AIHA PARTNERSHIPS

Country, City	US City, State Partners	NIS/CEE Partner Hospitals
Ukraine, L'viv	Buffalo, NY Millard Fillmore Health System, Buffalo School of Medicine, Biomedical Sciences	L'viv Railway Hospital, L'viv Perinatal Center
Ukraine, L'viv	Detroit, MI Henry Ford Health System	L'viv Oblast Clinical Hospital, L'viv Medical Institute
Ukraine, Odessa	Brooklyn, NY Coney Island Hospital	Odessa Oblast Hospital
Uzbekistan, Tashkent	Chicago, IL University of Illinois at Chicago Medical Center	Second State Medical Institute
COMMUNITY HEALTH/HEALTHY COMMUNITY PARTNERSHIPS		
Slovak Republic, Petrzalka	Kansas City, MO Truman Medical Center	Association of Aid to Children at Risk
Slovak Republic, Tucianske Teplice	Cleveland, OH The MetroHealth System	Turcianske Teplice Town Health Council
Slovak Republic, Martin and Banska Bystrica	Cleveland, OH The MetroHealth System	The cities of Martin and Banska Bystrica
HEALTH MANAGEMENT EDUCATION PARTNERSHIPS		
Albania, Tirana	New York, NY New York University	University of Tirana, Albanian Ministry of Health and Environmental Protection
Romania, Bucharest	Chicago, IL Institute of Health Services Management, University of Chicago	University of Medicine and Pharmacy "Carol Davila"
Slovak Republic	Scranton, PA University of Scranton	Tnava University, University of Matej Bel (Banska Bystrica), Health Management School (Bratislava)
GRADUATED PARTNERSHIPS		
Czech Republic, Bohemia	Las Vegas, NV University of Nevada, Las Vegas, College of Health Care Administration	South Bohemian University (Ceske Budejovice, Jindrichuv Hradec), Institute of Postgraduate Education in Health Care (Prague), University of Education (Hradec Kralove), Purkyne Military Medical Academy (Hradec Kralova)
Czech Republic, Olomouc	Richmond, VA Virginia Commonwealth University, Department of Health Administration	Palacky University
Russia, Moscow	Chicago, IL Premier	Central Clinical Hospital

INTRODUCTION

This report is designed to summarize and synthesize the self-assessments completed by the Partnerships in the Newly Independent States and Central and Eastern Europe (NIS/CEE). These Partnerships were supported by the American International Health Alliance (AIHA) under cooperative agreements with the United States Agency for International Development (USAID). This report is prepared by the National Perinatal Information Center (NPIC) for the AIHA. NPIC provided technical assistance to representatives from forty-six Partnerships concerning the self-assessment process, including individuals from graduated Partnerships in Russia and the Czech Republic. A complete list of these Partnerships, and the programs they assessed, is provided in Appendix A.

This report contains a description of the current self-assessment process and recommendations for future efforts, as well as a synthesis of Partnership reports in selected program areas. This report is not intended to comprehensively describe a particular Partnership or a particular Partnership's program; other AIHA reports as well as the self-assessment materials completed by the Partnerships provide this level of detail.

The information in this report is limited in a number of ways. Partnerships were not required to assess every program they had initiated; this report is therefore not a comprehensive review of any given program area (e.g., several Partnerships participated in women's health initiatives, but not all of the Partnerships selected this program area to assess). Most importantly, only the data which were provided by the Partnerships in their self-assessment materials were included in this report. Although US Partners had an opportunity to provide technical assistance and comments, the materials primarily reflect the perspective of the NIS/CEE Partners. Further, the self-assessment process was introduced to Partners toward the end of the cycle of AIHA support; it is difficult to retrospectively capture all of the important program activities and outcomes. Partnerships experienced varying levels of success with this task. For example, some Partners had difficulty reconstructing the range of inputs they had received, as well as the source of the input (e.g., if a particular training or piece of equipment had been provided by AIHA or by the US Partner); many Partnerships failed to indicate in the appropriate section that AIHA had provided the funding for exchange visits, even though this was recognized by all Partnerships as a key contribution. As a result, this report is best viewed as one piece of a series of efforts to chronicle the activities and outcomes of Partnerships in the NIS/CEE. In keeping with the spirit of the Partnership program, it is not an external evaluation, but the Partners' own assessment of their progress.

I. THE SELF-ASSESSMENT PROCESS

This chapter will describe the development and implementation of the self-assessment process which resulted in this report, including the:

- A. Purpose of the self-assessment process;
- B. Background for the development of the self-assessment process;
- C. Description of the self-assessment materials;
- D. Process Partnerships participated in to complete the materials; and
- E. Analysis of self-assessment data.

A. The Purpose Of Self-Assessment

Since the beginning of the AIHA program in 1992, the Partnerships have made a great deal of progress. As the AIHA sponsorship comes to a close, AIHA and the US Partners have focussed on assisting the NIS/CEE partners in continuing their successful programs with little or no US Partner support. The goal is to leave in place the capability for self-assessment by the NIS/CEE Partners when the Partnerships end. An important step in this transition is to provide technical assistance to enable the NIS/CEE Partners to conduct self-assessments of their programs. This activity will develop or enhance the ability of the NIS/CEE Partners to: determine if their programs were implemented as planned; continuously review program quality; quantify results/outcomes of the programs; and implement a process to make changes in programs based on this information. A consistent model for self-assessment also provides Partnerships with a common base for comparing results.

A self-assessment process which is consistent across Partnerships can provide information to guide future policy efforts. This information can be shared with national policy makers (e.g., the Ministry of Health), AIHA, funding sources (including USAID), and the public at large. Successful implementation of a self-assessment process will significantly strengthen the Partner programs capacity for sustainability.

B. Background

AIHA promoted this technical assistance, initially through a collaborative effort of five US Partners and a former program officer for USAID, including: David Gagnon, MPH, the Executive Director of the National Perinatal Information Center (NPIC); Lee Hougen, DrPH, USAID Program Officer (Retired); Laura Hurt, RN, Director of Medical/Surgical Nursing, Grady Health Systems; Fran Jaeger, MSW, PhD, Administrator, Perinatal Center, University of Illinois at Chicago; Phil Latessa, President, Iowa Hospital Education and Research Foundation; and M.

William Schwartz, MD, Professor of Pediatrics, Childrens Hospital/Univeristy of Pennsylvania. This Task Force provided information on models and strategies for Partnership self-assessment.

One of the Committee members, David Gagnon, traveled with AIHA staff to Stavropol, Russia, to field test the self-assessment model with the Stavropol - Iowa Partnership. This Partnership worked with staff to document the progress they had made using this methodology, and provided feedback on the framework and instruments. Following review of these comments, David Gagnon revised the self-assessment materials.

This revised version of the input/output/outcome self-assessment model was sent to US and NIS Partners prior to the NIS Annual Conference in Atlanta, Georgia (US) in September 1997. During the Conference, two sessions were scheduled to orient Partners to the process. These sessions were followed by meetings organized according to the regional location of the Partnerships: Russia and the Caucasus, Western NIS, and Central Asia. AIHA staff and consultants were available to work with individual Partnerships as they reviewed the forms; NIS and US Partners were also given a survey to evaluate the self-assessment instruments.

NPIC was engaged by AIHA to apply its expertise in developing and implementing the self-assessment process. Following the review of the feedback from NIS and US Partners, NPIC developed another draft of the self-assessment materials and adapted these instruments to accommodate the needs of the CEE. This adaptation included questions designed to capture the progress of the Healthy Community/Community Health Partnerships in the CEE. AIHA shared these materials with US Partners (of NIS and CEE sites); NPIC and AIHA staff solicited their feedback. NPIC staff then met with AIHA staff, Regional Directors in the NIS, and Country Coordinators in the CEE to develop the final version of the instruments. Once these materials were approved and translated, AIHA staff reviewed the adequacy of the translation.

C. Description Of The Self-Assessment Materials

Three sets of self-assessment instruments were developed, to respond to the uniqueness of the activities of each of these types of Partnerships:

1. Qualitative and Quantitative Surveys for Hospital Partnerships;
2. Qualitative and Quantitative Surveys for Community Health/Healthy Community Partnerships; and a
3. Qualitative Survey for Health Management Education Partnerships.

These instruments are described in more detail below.

1. Self-Assessment in Hospital Partnerships

The original self-assessment instruments were designed to capture the progress made by the hospital Partnerships, which included organizations such as the Emergency Medical Service Training Centers. (Appendix B contains a copy of these materials.)

a. Quantitative Assessment

Hospitals (organizations) were asked to complete a quantitative self-assessment of three programs. Examples of program areas include: infection control; emergency medical services; and nursing reform. The hospital quantitative assessment asked Partnerships to document their: inputs, outputs, and outcomes/results (defined below). This format was used to describe the impact of Partnership programs in three areas within the hospital (organization): organizational (management), financial, and clinical; as well as the impact of Partnership programs on the community, region or country.

Inputs are the resources which are committed/provided as part of the Partnership program. Examples of input include: time committed through site visits to partner hospitals; equipment and supplies provided; workshops and seminars offered; and materials/information disseminated to professionals to improve the management practices, financing structure, and/or clinical care in their hospital and, potentially, within similar institutions throughout the region or country.

Outputs are the direct products of the programs, the system modifications and activities which can be directly linked to input variables. Output refers to intermediate outcomes designed to contribute to the achievement of the ultimate goals of the partnership (final outcome/results). Examples of output for each area to be assessed include: organization of a new committee to monitor infection control and/or development of new physician/nurse teams (organizational/management outputs); initiation of concurrent budget review and/or development of a shared purchasing program (financial outputs); introduction of new technology and/or initiation of patient protocols (clinical outputs); development of a national credentialing system and/or development of national guidelines for infection control (community, region or country level outputs).

Outcomes/results refer to the ultimate impact of inputs and outputs combined. Outcomes/results must be measurable and linked to inputs and outputs that can be directly attributable to the partnership. To truly determine impact, baseline data are needed (data documenting the status of the system prior to Partnership activities) against which the results of Partnership programs can be compared. It was understood that not all Partnerships would be able to document outcomes. Examples of outcomes/results for each area to be assessed include: a measurable increase in staff efficiency and/or reduced length of stay (organizational/management outcomes); identification of

cost savings and/or elimination of institutional deficit (financial outcomes); reduced nosocomial infection rate and/or reduced post-surgical complications (clinical outcomes); improved health status in the community and/or regional decrease in accident-related deaths (community, region or country level outcomes).

b. Qualitative Assessment

The qualitative assessment is subjective and allows for a greater description of the Partnership successes, limitations, and difficulties. The Partnership can also use this type of assessment to describe aspects of their activities which may not have been quantified (provide anecdotal evidence), such as changes in attitude.

The qualitative assessment is of the entire Partnership (not just certain program areas). This set of questions is meant to give some structure to the Partners in describing the achievements of the entire Partnership as well as barriers they may have encountered during implementation. It was recommended that this set of questions be completed by the person who is most familiar with the activities of the entire Partnership.

2. Self-Assessment in Community Health/Healthy Community Partnerships

The quantitative self-assessment instrument provided to these Partnerships was a modification of the instrument designed for the hospital (organization) Partnerships (the revised quantitative instrument is described below). The qualitative self-assessment instrument was only slightly modified for these Partnerships. (Appendix C contains a copy of these materials.)

a. Quantitative Assessment

Community Health/Healthy Community Partnerships were asked to complete one quantitative self-assessment, documenting the: inputs, outputs, and outcomes/results of their program. The input section remained unchanged; the output and outcomes/results sections are described below.

Outputs for Community Health/Healthy Community Partnerships continued to be defined as the direct products of the input resources; the intermediate outcomes designed to contribute to the achievement of the ultimate goals of the Partnership (final outcomes/results). The questions were modified to better reflect the activities of these Partnerships. For example, they were asked to describe activities related to the: formation of a community based coalition; administration and analysis of a community health assessment; development of a community (or national) plan for health promotion and delivery system changes; and implementation of strategies designed to improve community (or national) health.

Outcomes/results for Community Health/Healthy Community Partnerships continued to be defined as the ultimate impact of inputs and outputs combined. It was clarified that outcomes/results must be measurable and linked to inputs and outputs that can be directly attributable to the Partnership. To truly determine impact, baseline data are needed (data documenting the status of the system/community prior to Partnership activities) against which the results of Partnership activities can be compared. It was not expected that these Partnerships, with only a few years of functioning, would have been able to achieve outcomes/results. The questions in this section were modified from the original survey. These Partnerships were asked to document any evidence of measurable improvements in the health status of the community, region or country related to Partnership activities (e.g., decrease in the prevalence of adolescent drug use within the community; decrease in the use of hospital care/increase in the use of home care and hospice care by the elderly and chronically ill).

3. Self-Assessment in Health Management Education Partnerships

Health Management Education (HME) Partnerships were not required to complete a quantitative survey, as they were participating in a peer review process facilitated by the Association of University Programs in Health Administration (this is described in more detail in Chapter VI). The qualitative survey completed by the HME Partnerships was an only slightly modified version of the instrument completed by the other Partnerships. (Appendix D contains a copy of this instrument.)

D. Process For Completing the Materials

The translated self-assessment materials were provided (by e-mail or hand delivered) by the Regional Directors and Country Coordinators to a person within each Partnership they designated as responsible for ensuring that the materials were completed. This person could then designate the individuals within the Partnership they believed could best complete each of the instruments.

Included with these materials was a page entitled *How to Receive Help to Complete the Self-Assessment*. This page detailed the three sources of help available to the individuals responsible for completing the instruments: the National Perinatal Information Center; the American International Health Alliance; and Partners in the United States (US Partners were asked to facilitate the completion of the surveys by their NIS/CEE Partners). Partners in the NIS/CEE could make contact (e.g., via e-mail) with any of these resources; a special mailing list was also established on the AIHA web site for questions and comments.

A significant source of technical assistance would be provided to each Partnership through regional meetings designed for this purpose in February (for the NIS) and May (for the CEE). The National Perinatal Information Center (NPIC) had primary responsibility for assisting Partnerships with the self-assessment process during these meetings. An NPIC staff member met for approximately 2 hours individually with each Partnership to review their first draft of the self-assessment materials (the exception to this protocol was in Moscow, where meetings with Partners were organized according to program areas). These meetings provided Partners with an opportunity to ask questions about the self-assessment materials, and an opportunity, if needed, for NPIC to clarify the Partner s responses.

Following these technical assistance meetings, Partners were asked to respond to questions that had arisen and provide any additional information that would clarify the progress made by their Partnerships. They were given a deadline to provide their final self-assessments to AIHA.

E. Self-Assessment Data Analysis

This section of the report will describe the process used to analyze: 1) the quantitative, and 2) the qualitative data.

1. Quantitative Data Analysis

The intent of the quantitative data analysis was to develop a synthesis of the self-assessment materials relevant to particular program areas (e.g., infection control). Data from each self-assessment was reviewed initially to develop a typology of the programs which were assessed on the quantitative forms. Once this typology was developed, outliers (program areas which were unique) were removed from the analysis (as there would be no opportunity for comparative analysis). Some of these unique programs were: a toxicology program in Almaty, Kazakstan; a program to provide medical aid to burn victims in Kyrgyzstan (reported on by the Bishkek Partnership); an orthopedics and joint transplantation program in Donetsk, Ukraine; development of an alcoholism treatment program in Dubna, Russia; and a program to address tuberculosis in Zagreb, Croatia. Appendix A contains a complete list of all of the programs assessed on the quantitative survey; these programs represent only a sub-set of all of the programs of the Partnerships.

Once the programs were grouped according to the typology, analysis of the quantitative self-assessment data was conducted using a grounded theory method. With grounded theory, analytic or interpretive procedures (coding techniques) are used to reduce and order the data. Coding techniques included open coding (e.g., key word search), axial coding (recombining data through

making connections between categories), and selective coding (integrating major categories, selecting the core category). The data are used to build theory; data are interpreted to propose relationships among concepts and provide a framework for action (e.g., determine what outputs and outcomes were commonly produced, most particularly from the vantage point of identifying the key inputs/supports which were required). With grounded theory, the theories that are developed are constantly compared to the data for validation, ensuring that four criteria are met: fit, understanding, generality and control (the theories that are developed should make sense, be applicable, and provide control with regard to action).

Results of this analysis for each program area are presented in this report and include: the key inputs described in the self-assessments; typical and exemplary outputs described in the self-assessments; and model outcomes achieved by the Partnerships in the program area.

2. Qualitative Data Analysis

Following analysis of the quantitative data in each program area, NPIC staff reviewed the qualitative responses from the represented Partnerships (the Partnerships which had provided a quantitative assessment in the particular program area). These comments were used to inform and augment our understanding of the quantitative data. For example, question #3 on the qualitative questionnaire asks Partners to critique the relative effectiveness of site visits in the US compared to site visits in the NIS/CEE; these responses enlightened our understanding of Partners' reports of inputs and are reported in the key inputs: activities during exchange visits sections of each chapter. Further, information Partners provided on the qualitative questionnaire about program sustainability was used to clarify reports of financial, organizational and clinical outputs or outcomes. These responses were integrated into the appropriate sections of the report.

Qualitative data were also used to develop the section in each chapter titled pre-existing conditions. Specifically, the qualitative questionnaire asked Partners to describe the major health problems they chose to address through their programs and the barriers they encountered in the process, including barriers which prevented progress in transforming attitudes and practice within their institutions/community. It was determined that this information would be useful to set a context for the findings; these data are presented in each chapter prior to describing inputs/outputs/outcomes to help the reader fully appreciate the accomplishments of the Partnerships.

II. A MODEL FOR FUTURE SELF-ASSESSMENT EFFORTS

Many of the Partnerships were able to accomplish dramatic results through the support of the Partnership program. The self-assessments described only some of most Partnerships' efforts; as described previously, the information provided through the self-assessment materials is limited in

several ways. Certain lessons were learned through implementing the self-assessment process that form the basis for the recommendations presented in this chapter. These recommendations retain much of the original self-assessment model (as opposed to an external evaluation), which is in keeping with the spirit of the Partnership process.

This chapter includes a discussion of:

- A. Lessons Learned in the Implementation of the Self-Assessment Process;
- B. A Model For Future Self-Assessment Efforts; and
- C. Recommendations for Technical Assistance.

A. Lessons Learned in the Implementation of the Self-Assessment Process

Difficulties encountered while implementing the self-assessment process are described in this section, including: 1) problems related to the self-assessment materials; and 2) lessons learned in the process of providing technical assistance.

1. Self-Assessment Materials

There were several iterations of the quantitative and qualitative instruments, with the goal of achieving a set of questions which would be clear and comprehensive. This resulted in a lengthy quantitative instrument for the hospital (organization) based Partnerships; not all questions would be relevant to each program area. Partners in the NIS had been introduced to the model during their annual conference; however, the model they reviewed had undergone substantial revision. Given that these materials were introduced at the end of the cycle of support, and in recognition of the voluntary nature of the Partnership effort, guidance concerning how to complete these materials would be critical.

Directions for completing the self-assessment materials were developed for each set of instruments. It became evident that in some cases these explanations needed to be more detailed. For example, Partners struggled to answer questions which were not relevant to their program area. This resulted in some confusion, as well as undue expenditure of time. Further, since these reporting requirements had not been specified in the beginning of the Partnership, some respondents had to struggle to recollect the information needed to answer the questions. This not only created frustration for some Partners, it also resulted in less thorough and accurate reporting.

These problems were compounded in the process of distributing the materials. The self-assessment materials were provided to a Partnership representative by an AIHA staff member within their

region or country. This Partnership representative in turn distributed the materials to the individuals responsible for completing each set of questions. This created several opportunities for unclear communication; it became evident that the written directions for completing the materials (and information regarding how to access technical assistance to complete the first draft) were not provided to each respondent. Further, the importance of this process was not always clear to respondents, prior to their attendance at the face-to-face technical assistance meetings.

2. Technical Assistance

Technical assistance meetings were held to provide an opportunity for Partners to seek clarification on the self-assessment materials, and in general to promote a thorough, accurate report. Partners were asked to complete a first draft of the materials for review during their technical assistance meeting. In general, our experience was that these meetings were both necessary and useful. Partners who had found the materials either confusing or intimidating had an opportunity to ask questions and walk through their answers; Partners who had found the materials comparatively easy to complete were provided an opportunity to expand on their responses. These meetings were most useful under two conditions: when substantial effort had been expended to complete a first draft; and when the Partner attending the technical assistance meeting had either personally completed the materials or had a good understanding of each of the programs. Under these conditions, the draft material could be reviewed to determine if the questions had been understood and if they had been answered as completely and as accurately as possible. It was less useful if the first draft had not been completed - an undue amount of the time available for the technical assistance meeting was then occupied reviewing the questions, rather than responses to the questions. Further, when the Partnership representative was unfamiliar with one or more of the programs which had been assessed, they were less able to respond to questions from NPIC about the answers on the self-assessment instruments. Questions and requests for elaboration which were to be forwarded to the appropriate (non-attending) Partner did not appear in all cases to have been communicated. This highlights the importance of communication and support following technical assistance meetings.

As previously described, technical assistance meetings were structured in one of two ways: either NPIC met individually with Partnership representatives to review all of their materials (in some cases these meetings included US Partners); or NPIC staff met with representatives from a number of different Partnerships to review their self-assessments of a particular program area (e.g., in Moscow, NPIC met with all Partners who had completed a self-assessment of an infection control program). Individual meetings facilitated a more complete review of the self-assessment materials,

it was particularly beneficial to directly draw on the added feedback of the US Partner. However, the group meetings allowed for sharing among peers, which in many cases promoted recollection of inputs and outputs, and an elaboration of responses. These group sessions provided an additional benefit not directly related to the self-assessment process, through promoting interaction between Partnerships. A model which draws on the strengths of each of these approaches to providing technical assistance would be optimal.

B. A Model For Self-Assessment

The benefits of implementing a consistent model across Partnership sites have been described, and include the potential for cross-site comparisons of results. We believe that accomplishing consistency and quality in the more ambitious data collection effort proposed below will require subsidizing data collection efforts. With this fundamental recommendation in mind, a model for: 1) quantitative self-assessment; and 2) qualitative self-assessment will be presented.

1. Quantitative Self-Assessment

There were two major challenges experienced when developing the self-assessment materials: one was developing a reporting format that was uniform yet also captured the complexity of the diverse programs; the second was creating questionnaires that would be detailed enough to facilitate an understanding of the programs, yet not so lengthy that they placed an undue burden on Partners time. These two challenges were considered when developing the model presented below. Recommendations for a) a reporting format and b) reporting requirements will be discussed.

a. Reporting Format

It is recommended that the original model be retained, including standardized questions across sites and the input - output - outcome format. There should, however, be two important modifications. First, the reporting should be prospective; second, standardized questions should be designed, using the same basic format, to reflect the indicators specific to each program area.

The system for collecting data should be prospective, implying that the self-assessment measures will be determined when the original workplan is developed. Common measures should be identified for particular program areas, using international standards when possible. This insures that all Partnerships which have, for example, infection control as a program area will be collecting the same set of data. This facilitates cross-site comparability as well as the reporting of aggregate outcomes. It will be the option of individual Partnerships to add site specific variables of interest to their particular Partnership.

In the original self-assessment effort, quantitative questions were modified to more adequately reflect the activities and outcomes of the Community Health/Healthy Community Partnerships. Not only did these modifications more adequately capture the success of these programs, it also made reporting easier as these Partnerships did not have to struggle to determine how their activities fit the uniform questions. It is recommended that future efforts build on this experience, using the basic set of questions which have been developed, to create quantitative questionnaires specific to each program area (e.g., infection control, emergency medical services).

b) Reporting Requirements

Development of a self-assessment plan should begin with the workplan of the Partnership. A workplan with clearly delineated objectives and anticipated results facilitates the identification of outcome indicators, and promotes an understanding by all participants of reporting requirements. As will be discussed in the section which follows on technical assistance, efforts should be made to insure that workplans are realistic as well as clear. Cross-site requirements for data collection as well as recommendations for additional measures will be provided at the onset of the Partnership (e.g., determining the cost of care; patient satisfaction; morbidity and mortality measures).

Part of the early work with each Partnership should be identifying the availability of baseline data. Data may be pre-existing; if so, it will be necessary to ensure the integrity of this data, to determine if it meets the standards specified in the reporting requirements identified for each program area. To ensure the quality of the data, each workplan should detail the system for collecting baseline data as well as data during and after program implementation.

It is recommended that Partnerships provide self-assessment reports every six months. This timeframe is proposed to minimize paperwork requirements, yet maximize the potential for the data to be of utility to the Partnerships and AIHA. (Other reporting requirements should be integrated as much as possible into this system.) In order for this data to be of most use to the Partnerships, feedback loops (between the Partnership and AIHA, and between the Partnership coordinators and those involved in Partnership activities) need to be developed. This system can ensure that the reporting information is integrated into ongoing quality assurance and program improvement efforts, maximizing the best use of all program resources. An additional benefit is that awareness of ongoing progress can in itself lead to greater productivity and investment on the part of the personnel involved in the program.

Finally, it is recommended that reports be filed electronically. This ensures that each Partnership has a database for potential review of their program data, and facilitates the sharing of information between Partnerships (an important resource for Partnerships).

2. Qualitative Self-Assessment

It is recommended that a qualitative self-assessment continue to be a required aspect of the self-assessment process. As previously described, a qualitative self-assessment facilitates an understanding of aspects of the program and its implementation that cannot be easily quantified. This includes identifying obstacles/barriers to successful program implementation, which targets areas for assistance as well as establishes a realistic level of expectation for success and replication.

If a qualitative self-assessment questionnaire is to be included, the original instrument can serve as a model. This set of questions should be consistent across all program areas. It is recommended (as in the original process) that Partnerships provide one qualitative report summarizing activity across all program areas; this should be provided every six months (with their quantitative reports). However, it is also recommended that the instrument be improved to remove questions which are redundant with questions on the quantitative instrument, and to clarify questions which were unclear (e.g., it was learned when providing technical assistance that the question inquiring about relationships with other Partnerships was not understood by many of the respondents; this is an important issue which should be accurately recorded). As always, it is essential to verify the adequacy of translation.

B. Recommendations for Technical Assistance

It is not anticipated that all of the Partnerships will have the expertise on-site to implement the self-assessment model described above. Technical assistance was provided to Partnerships for the original self-assessment effort, and will be required in this model as well. This section will discuss: 1) the type and timing of technical assistance; and 2) personnel involved.

1. The Type and Timing of Technical Assistance

Technical assistance needs to be provided a) prior to program implementation, then b) on an ongoing basis (as required by each Partnership). The recommended type of technical assistance at these time points is described below.

a) Initial Technical Assistance

It was evident during the previous process that Partnership personnel had a range of experience with quality improvement/self-assessment efforts. To ensure that the reporting requirements can be adequately met, it is recommended that an orientation program be provided to Partnerships prior to beginning any program activity (including development of a workplan). This training would include group presentations (e.g., introduction of the model; explanation of standard measures; use of electronic reporting), as well as individual meetings with each Partnership (NIS/CEE representatives and US representatives) to develop the workplan, including data sources and data collection. The individuals with overall and specific responsibilities for program implementation in the NIS/CEE should participate in these meetings. In addition, materials relevant to each training should be provided to each Partnership to serve as a resource. Questions to be asked include: are the objectives and anticipated results of the Partnership clear? Do the existing data sources meet quality standards? Do data collection plans meet the requirements for cross-site reporting? Have staff been identified who will be responsible for data collection and data entry? After the orientation, Partnerships which may require additional assistance can be identified, and a plan for providing this assistance should be developed.

b) Ongoing Technical Assistance

The six month reports provide an opportunity to identify those Partnerships which may be in need of additional technical assistance during program implementation. Part of the review of reports should include an assessment of Partnership efforts to respond to any problems identified by themselves or AIHA through previous reports. When possible, assistance should be provided via e-mail or fax, to minimize costs. Site visits can also be scheduled to accommodate technical assistance needs. Such visits should be scheduled to coincide with exchange visits by US Partners, to maximize the use of all resources.

Of course Partnerships should be able to access technical assistance whenever they identify a need for help. If, as recommended, reports are filed electronically, there is the potential opportunity for Partnerships to review each other's activities and learn from each other's efforts (as well as see examples of model reports to assist in developing their own materials). Publications by AIHA can also be used to disseminate promising practices and findings.

An equally important opportunity for peer review is provided through the past practice of scheduling annual Partnership conferences. During these gatherings, sessions can be scheduled for Partnerships in particular program areas to meet and share activities and outcomes, offering recommendations for improvement and strategies for solving problems. This type of session was one aspect of the technical assistance provided during the site visit to the Partnerships coordinated

through the Russian Federation and Transcaucasus Regional Office, and was very well received by the Partners.

2. Technical Assistance Personnel

As with the original self-assessment efforts, it is recommended that there be three primary sources of technical assistance for NIS/CEE Partners: a) US Partners; b) AIHA staff; and c) an outside self-assessment consultant.

a) US Partners

US Partners were an important source of technical assistance during the original self-assessment effort. Their role in this recommended model would be expanded, as US Partners would be involved in the beginning in developing plans for data collection through their workplan. Since US Partners are in frequent contact with their NIS/CEE counterparts, including face-to-face contact, they can serve an important trouble-shooting role in the self-assessment process.

b) AIHA Staff

AIHA staff were also an important source of technical assistance during the original self-assessment effort. Again, they would have an expanded role in the process, overseeing the biannual reporting process and providing technical assistance as required. AIHA staff in each region should include individuals who have been trained in the self-assessment model, to maximize the assistance that regional offices can provide to individual Partnerships.

c) An Outside Consultant

Finally, as with the original model, it is recommended that an outside consultant be responsible for overseeing the entire self-assessment process. To ensure the integrity of the data it is important that an independent party oversee data collection and reporting. Further, since one aspect of the qualitative data involves identifying areas of improvement in the role of AIHA, an honest assessment is facilitated when the questioner is seen as a neutral party. This consultant(s) should be responsible for ongoing review of materials and the cross-site aggregate data analysis, identifying emerging trends and patterns and providing semi-annual reports to AIHA and Partnerships. Such reports should be designed to maximize the potential for the dissemination of results and the sustainability of programs after the completion of funding by AIHA.

III. PRIMARY CARE/CLINICAL PRACTICE

Partnership activities had an emphasis on sharing knowledge of techniques which have been successful elsewhere, adapting and disseminating them as necessary to improve the quality of care

provided in the NIS/CEE. Partners developed a variety of programming to improve primary care, guided by the Institute of Medicine's broad definition of primary care as the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community.

This chapter will describe the NIS/CEE Partner's self-assessment of those efforts, including programs which focussed on:

- A. Women's Health; and
- B. Specialized Training in Clinical Care.

The structure for describing findings in each of these program areas includes:

- 1. a description of the pre-existing conditions in the program area;
- 2. key inputs described in the self-assessments;
- 3. typical and exemplary outputs described in the self-assessments; and
- 4. model outcomes achieved by the Partnerships in the program area.

A. *Women's Health Projects*

Seven Partnerships reported on their progress in women's health. This included two in the CEE: University Clinical Center of Tuzla in Tuzla, Bosnia and Herzegovina; and Faculty Hospital and Polyclinic in Kosice, Slovakia; and five in the NIS: Erebuni Medical Center in Yerevan, Armenia; Savior's Hospital for Peace and Charity in Moscow, Russia; Stavropol Regional Hospital, in Stavropol, Russia; Center for Maternal and Child Health Care of the Left Bank in Kiev, Ukraine; and Second State Medical Institute, in Tashkent, Uzbekistan. Partnerships focussed on reproductive health issues (e.g., decreasing maternal mortality; promoting family planning and safe sex practices) and strategies designed to prevent illness/improve health in the broadest sense throughout women's lives (e.g., cancer screening and education).

The self-assessments described activities resulting from AIHA initiatives as well as work with US Partners. In June 1996, AIHA convened a Women's Health Task Force, comprised of women's health clinicians and educators associated with the partnership program to develop a model for the creation of Women's Wellness Centers. This work built on Partnership efforts to comprehensively address and manage the unmet health care needs of women. Some Centers were newly established; some significantly enhanced programs where they already existed (e.g., Savior's Hospital in Moscow, and Erebuni Medical Center in Yerevan).

1. Pre-Existing Conditions

Women's health, especially women's reproductive health, is an area that had not received enough attention in the NIS and CEE. Problems included limited information about modern family planning methods as well as the cost of these methods, which contributed to low contraceptive use and a high abortion rate. For example, the Partnership based in Kiev reported a rate of 78.5 abortions per 1000 women of fertile age in Kiev in 1993 (compared to an also high rate of 66.8 for the Ukraine in total in 1993). Repeated abortions, combined with an underdeveloped program to treat gynecological infections and sexually transmitted diseases, contributed to complications in pregnancy and high levels of secondary infertility. High maternal mortality rates were reported in Partnership cities (e.g., Tashkent reported a rate of 80 per 100,000 live births, 8 times more than Western countries); there was a need to improve access to care and improve management of delivery to address these high maternal mortality rates. Perinatal training and birth preparation classes were rare or nonexistent.

General health education and cancer screening programs were also rare or ineffective. For example, breast cancer is a major health threat to women; this was a particular concern in the areas impacted by the Chernobyl disaster where deaths from breast cancer rose 38 percent between 1981 and 1992. (Although there is an AIHA initiative directed toward this issue in the Ukraine, none of the Partnerships described programs in this area as part of their self-assessment). Early detection was hindered by a lack of advanced medical equipment and a lack of knowledge of early breast cancer detection methods. In many areas where disease prevention/health promotion activities did exist for women, they had not been directed at teenage girls (e.g., prevention of pregnancy). Overall, there was a need to better integrate health care services for women of all ages.

2. Key Inputs

Inputs will be described in three areas: a) activities during exchange visits between the US and NIS/CEE partners; b) equipment, supplies and educational materials provided by the US partners; and c) inputs provided by AIHA.

a. Exchange Visits

Through exchange visits, individuals from the NIS/CEE traveled to the US to observe how procedures were done and services were organized; and US Partners traveled to the NIS/CEE to help their Partners adapt techniques and services to local conditions. An average of 15 visits to the NIS/CEE sites directed at this program area were made during the Partnership by the US (a range from 10 to 25 in the Partnerships that reported this information); and an average of 13 visits to the United States were made by the NIS/CEE Partnerships (a range from 6 to 30 in the Partnerships that reported this information).

Exchange visits provided opportunities for training in the US and NIS/CEE. Particularly through trainings held in the NIS/CEE, whereby large audiences of physicians, nurses, clinical interns, students and epidemiologists could be exposed to new techniques. Training included: reproductive health topics (e.g., new approaches to hormonal and non-hormonal correction of menstrual cycle abnormalities; birth control methods; managing high-risk groups of pregnant women and women in childbirth); infection control issues relevant to women's health; and health issues for women throughout the life span (e.g., osteoporosis prevention; screening of cervical carcinoma; and managing patients with pre-malignant conditions of the breast and female genitalia). Extensive training took place in the Partnerships in Moscow and Yerevan (with pre-existing women's health programs) to prepare childbirth educators to conduct birth preparation classes. Partnerships also received training in health management and in the use of medical equipment provided by the US.

b. Equipment, Supplies and Educational Materials

Another important type of input provided by the US partners was major equipment and educational materials. All US Partners provided textbooks and other educational materials (included brochures for patients) related to the training provided. Topics covered by these materials included: family planning, prenatal care, breast cancer detection/breast self exam, menopause and osteoporosis. As a respondent from Tashkent indicated, these materials were invaluable since the country's economic crisis made it impossible for the government to continue to provide educational materials.

The US Partner provided equipment and supplies to assist in clinical care (e.g., oral contraceptives, an ultrasound machine, stethoscopes, examination tables, laboratory tests for diagnosing sexually transmitted diseases) and to assist in patient education (e.g., family planning videos, projectors, women's health posters and other visual aids). Some US Partners also provided office equipment to support Partnership activities (e.g., computer hardware, software and manuals; copiers). In Yerevan, American partners sponsored the publishing of brochures compiled

by the Medical Center physicians on management of pre-malignant lesions of the cervix, hypertension in pregnant women, breast disease, and the use of various contraception methods.

c. AIHA Inputs

The AIHA, of course, played a key role through the sponsorship of exchange visits. AIHA also assisted in providing equipment and supplies, including establishing a Learning Resource Center (LRC) for each Partnership (the LRCs are described in more detail in the chapter of this report labeled Information for Decision-Making). Through the LRCs Partners established Internet sites; as one Partner described: the scope of information improved dramatically , as did the time it took to access information. The AIHA provided educational material and trainings, including seminars on how to manage and organize Women s Wellness Centers for the Partnerships that were involved in these efforts. The AIHA s Women s Health Task Force developed practice guidelines and materials on topics including: infection control and safety, family planning and health education.

3. Typical and Exemplary Outputs

Outputs for women s health programs were described in these four areas: a) organizational (management), b) financial, c) clinical, and d) community, region or country level changes. Typical and exemplary outputs in these four areas will be described in the sections below.

a. Organizational (Management) Outputs

Partnerships described changes in the organizational structure of services as a result of Partnership activities. For example, in Stavropol child and adolescent gynecology wards were created. In Tashkent, inpatient units for single-day stay were created; a pre-hospitalization examination was developed which cuts the length of a patient's stay in the inpatient units (also saving on the cost of services). Kosice was able to shorten stays through implementing a new scheduling system for patients undergoing surgery. Organizational changes were also described related to health promotion and patient education. A unit for diagnostics and consultation was established in the Center for Maternal and Child Health Care in Kiev to provide information on family planning. At Savior s Hospital for Peace and Charity in Moscow, the Women s Wellness Center incorporated a number of initiatives, including the Family Planning Clinic, the Woman and Family Education Center, and the adolescent sex education and clinical program.

Typically, Partnerships also reported changes in the structure of staff relationships, the development or revision of job descriptions, and/or changes in personnel policies which complemented changes in organizational structure. In Stavropol, a new position of an adolescent obstetrics/gynecology physician was created and the job descriptions of the Women s Health

Center staff were modified to correspond with the Center's main areas of focus (contraceptive counseling, teenage sexual education and prenatal diagnostics). In Moscow, new positions were created/specialists hired, including: medical registrar, gynecologist-endocrinologist, psychologist, and manual therapist. One of the most frequent changes was to increase the responsibilities of nurses to include patient education and some aspects of taking the patient's history/examining patients; teams of physicians and nurses were developed to deliver care (these changes are described in more detail in the chapter of the report titled *Resource Management and Human Resource Development*).

b. Financial Outputs

The new organizational structures which were developed were typically more cost effective; new sources of revenue were also introduced in women's health services which contributed to improvements in the financial area. These new sources of revenue included services developing some financial self-sustainability through charging fees: in Kiev patients now pay for their contraceptives; in Yerevan, wages are paid and (in part) expenses are covered related to purchasing pharmaceuticals, disposable medical supplies and instruments, laboratory reagents and appliances. In some instances, charitable foundations provided new sources of revenue: Saviors Hospital for Peace and Charity in Moscow created a non-profit Woman and Family Foundation which donated \$24,000 to purchase surgical equipment. (They also initiated a system for voluntary medical insurance.) In Tashkent, it became possible to introduce changes in the procurement plan and increase the purchase of medical preparations as a result of receiving upgraded medical equipment and supplies from their Partnership Institution.

These new sources of revenue contributed to the need for new budget models and changes in budget operation/budget control. In some cases, purchasing of necessary supplies and equipment was now planned in advance in accord with generated revenues. In Yerevan, a system of monitoring patients' financial credit and debit was developed which included the introduction of a system of monthly, semi-annual, and annual financial reporting. Some Partnerships reported that they were limited in what they could accomplish in the areas of management and financing, as changes must be done at the Ministry of Health level.

c. Clinical Outputs

As a result of Partnership activities, new technologies were introduced in the area of women's health. Saviors Hospital for Peace and Charity in Moscow now offers hysteroscopy, laser surgery, and colposcopy; they also began using Norplant as a birth control method. In Yerevan, all the Women's Wellness Center physicians mastered the techniques of ultrasonic scanning and colposcopy. Tashkent and Stavropol introduced the technologies of laparoscopic surgeries and surgical sterilization. (Improvements related to the introduction of laparoscopy are described in greater detail in the second part of this chapter, *Specialized Training in Clinical Care.*)

Many new practices and procedures resulted in the development of new clinical skills and patient protocols. For example, in Yerevan, new protocols for the management of patients with pre-malignant lesions of the cervix and other gynecological disorders were developed. In Kosice, each patient admitted to the department has a cervical smear taken for the early detection of cervical cancer. In these two hospitals and at Saviors Hospital for Peace and Charity in Moscow the Lamaze method was introduced; one of the instructors at this hospital became a member of the international Lamaze association. Moscow also initiated new massage and exercise techniques for newborns and expectant mothers, and rooming in for mother and baby. There were also changes in procedures to ensure the quality of clinical care. In Tashkent, a clinical oversight committee called the "Constantly Functioning Commission" was established at the clinic which is responsible for: monitoring the quality of treatment; discussing and clarifying the causes of complications; analyzing mortal cases; analyzing the complaints of patients or their relatives; and staff qualification attestation.

Partnerships reported changes in the interaction between health care providers and patients: that relationships became less formal; that providers became more considerate towards patients; and that providers had more awareness of patient rights, including respect for the confidential relationship between medical personnel and a patient. In Kosice, a questionnaire was introduced to assess acceptance of changes in clinical practice by patients. In Yerevan, a system of making appointments for seeing a physician was set up, and a pregnant woman was now given the opportunity to choose a doctor for prenatal care, delivery and care during the postpartum period. Medical personnel (both physicians and nurses) began to participate actively in patient education. For example, in Tashkent nurses started to communicate more with patients during treatment and when solving social issues; physicians started to spend more time discussing disease prevention.

New mechanisms for record keeping and reporting were frequently introduced in conjunction with changes in clinical practice. The introduction of computerized data collection and processing

greatly facilitated the record-keeping process at many sites; Kiev trained 25 personnel to use new methods of medical statistics. Yerevan installed a computer system of medical record monitoring installed and developed patient questionnaires, pregnancy follow-up charts, and monthly report forms. In Tashkent, a system for using medical cards with patients was worked out by AIHA; it then became possible to prepare different reports and analyses after the medical cards had been processed and the data put into the database.

d. Community, Region or Country Level Outputs

Some of the programs directed at women's health had an impact beyond the hospitals involved in the Partnership. In Kosice, improvements were made in regionalization to increase in utero transport of high risk pregnancies to a hospital which could provide a higher level of clinical care. Sixteen Woman and Family Education Centers based on the Saviors-Magee model have been established in Russia. Stavropol also disseminated their experience with family planning to other health care institutions in other regions: guidelines on preventing women's morbidity and mortality were developed and 1000 issues were disseminated among obstetricians and gynecologists in the region; an affiliate of the Krai Women's Health Center was set up in Essentuki. In Kiev, a State Program on Family Planning was adopted in 1996.

Partnerships also reported improvements in community, regional or national information exchange. Many had established and/or were participating in an Association of Nurses; in Tashkent this was funded by the Association and their Ministry of Health. Moscow reported that a Russian Association of Psychological Problems in Birth had been created; this Partnership published the Women's Health Festival, an annual newsletter, and advertised their services on television and in relevant journals. They also created video films *Partnership in Birth* and *You and Your New Baby*, and published *The Twelve Months of Pregnancy* brochure.

4. Model Outcomes

As with the outputs section, outcomes for women's health programs will be presented below in these four areas: a) organizational (management), b) financial, c) clinical, and d) community, region or country level changes. Partnerships reported a number of outcomes anecdotally. As indicated in Chapter One of this document, many Partnerships had not put in place a system for collecting and analyzing pre- to post program implementation data.

a. Organizational (Management) Outcomes

Potential outcomes include: measurable increase in the quality of care (patient satisfaction); a measurable increase in staff efficiency; and a measurable decrease in patient length of stay related to inputs and outputs in this program area. Patient satisfaction surveys had been initiated in several Partnerships; however, the results of these surveys were not available. Yerevan was able to document a reduction in average hospital length of stay for deliveries from 7-8 days to 3-4 days, and for surgical operations from 10-12 days to 6-8 days related to Partnership activities.

b. Financial Outcomes

Potential outcomes included: evidence of cost savings; evidence of new sources of revenue; and evidence of reduced deficit related to inputs and outputs in this program area. As previously reported in financial outputs, new fee structures had been implemented and a number of medical procedures were now performed at outpatient departments or during shorter stays in the hospital. However, the revenues which were generated and/or the cost savings which had accrued as a result were not quantified in the self assessment reports.

c. Clinical Outcomes

Partnerships were asked to report measurable increases in the quality of clinical care (evidence of reduced morbidity/mortality) related to inputs and outputs in this program area. Stavropol reported a 30 percent decline in abortions; maternal mortality rates were also reported to have decreased by 30 percent over the past five years (the baseline and final rates used to calculate these percentages were not provided). Kosice also reported a decline in abortions between the 8th and 12th week of pregnancy. Yerevan reported a reduction in perinatal mortality rates from 26.7 percent in 1992 to 18 percent in 1996, then 13 percent in 1997. (Hospital admission rates for women with high risk pregnancy were also reported to have lessened since new management protocols were introduced which, for example, decreased the amount of severe preeclampsia. However, these rates were not quantified.)

d. Community, Region or Country Level Outcomes

Kiev reported a decrease in the number of abortions in their city related to their family planning programs (an associated decrease in the number of unplanned pregnancies), as well as a decrease nationally in the Ukraine associated with the State Program on Family Planning adopted in 1996. In the baseline year of 1993, there was a rate of 78.5 abortions per 1000 women of fertile age in Kiev and a rate of 66.8 in the Ukraine; by 1997 this rate had decreased to 48.0 in Kiev and 40.0 in the Ukraine.

B. Specialized Training in Clinical Care

As previously indicated, Partnership activities had an emphasis on sharing technology and techniques which had been successful elsewhere, adapting them as necessary to respond to local conditions. Programs were provided to improve the quality of care in cardiology, urology, nephrology, and ophthalmology; a number of Partnerships were provided with the technology and training to begin to provide laparoscopic surgery.

The activities of six Partnerships in the NIS that assessed their specialized training in these areas will be described in this section. This includes: the Central Clinical Hospital in Moscow, Russia (cardiology); Murmansk Regional Hospital, Murmansk, Russia (cardiology and laparoscopic surgery); St. Petersburg Medical University in the Name of Pavlov, St. Petersburg, Russia (urology and ophthalmology); the Medical Consultive Center in the Name of President Niyazov, Ashgabat, Turkmenistan (laparoscopic surgery and nephrology); L'viv Oblast Clinical Hospital, L'viv, Ukraine (urology); and the L'viv Railway Hospital, L'viv, Ukraine (ophthalmology and laparoscopic surgery).

1. Pre-Existing Conditions

Partnership programs provided an opportunity to provide new or expanded services in the NIS which typically had not been available due to a lack of funding (for equipment, supplies, and/or training). For example, in Ashgabat, there was no capacity to treat acute or chronic renal failure within the country; laparoscopic surgery was similarly not available. In Moscow, the Central Clinical Hospital provided cardiac care but had to refer to other facilities for invasive procedures; developing their capacity to perform balloon angioplasty and coronary artery bypass surgery would better serve patients as well as decrease the cost of care. The choice to upgrade a particular area of clinical care was in some cases social as well as medical: in St. Petersburg, the large number of elderly patients contributed to the decision to select ophthalmology (including glaucoma detection and treatment) as a program area.

2. Key Inputs

Inputs will be described in three areas: a) activities during exchange visits between the US and NIS partners; b) equipment, supplies and educational materials provided by the US partners; and c) inputs provided by AIHA.

a. Exchange Visits

Each aspect of the exchange visits were important to the success of activities in this area. During the early stages of the Partnership, individuals from the NIS traveled to the US to determine what could be feasibly implemented within their hospitals and to receive training in new procedures. US Partners traveled to the NIS to help their Partners implement new procedures in recognition of local conditions; teams from the US and the NIS jointly performed surgery. Later, as NIS Partners began to implement these new services, US Partners were able to provide advanced training and help insure the quality of the procedures. An average of 2 visits to the NIS sites directed at this program area were made during the Partnership by the US (not all Partnerships reported this information); and a range from 3 to 5 visits to the United States were made by the NIS Partnerships (again, not all Partnerships reported this information).

Exchange visits provided opportunities for training in new procedures and technology in the US and NIS. Surgeons, nurses and anesthesiologists from the NIS traveled to the US to observe procedures and receive training in their specialties. Many of the visits to the US involved lengthy stays for extensive training. For example, an internship in the US for staff from Murmansk included specially designed training sessions with a cardiac surgeon, an anesthesiologist, perfusiologists and a physician; this training in the US (with qualification exams) made it possible to launch the cardiosurgery program. In some cases the format was an intensive train the trainer course, which provided a small group of health care professionals with the skills they would need to disseminate their knowledge to their colleagues. Topics covered: cardiology (e.g., diagnostic and invasive cardiology, surgical treatment for coronary artery disease, children s cardiosurgery); urology (e.g., transurethral resection of the prostate and bladder, treating male infertility); ophthalmology (e.g., laser therapy for diabetic retinopathy, cataract facoemulsification); and laparoscopic surgery (e.g., special anesthesia procedures). Particularly for nurses, training topics included pre- and post-operative patient management, as well as training in the development of leadership strategies in nursing. Partnerships also received training in infection control relevant to surgical procedures.

b. Equipment, Supplies and Educational Materials

The new equipment provided by the US partners, which was often necessary to implement new surgical procedures, was an important type of input in this program area. Examples of equipment provided by US Partners includes: defibrillators, artificial circulation apparatus, a chemoclave, an electrocoagulator, instruments for laparoscopy, apparatus for temporary electrocardiostimulation, inspirational spirometers, ventilators, and supplies for artificial circulation and open heart

operations. General supplies and equipment were also provided (e.g., bandages, monitors). St. Petersburg received a microscope which would enable them to perform vitreous-retinal surgery. As a result of the Partnership in Ashgabat, a model surgical suite and a model dialysis suite were opened in the Medical Consultive Center; the equipment to furnish these suites was donated by their Partners (operating tables, anesthesia machines, infusion pumps, cautery machine, dialysis machines and surgical instrument sets).

Books, videos and other materials were provided to assist Partners in the NIS in clinical care, as well as the use and maintenance of new equipment. These materials covered topics in: cardiology (e.g., thoracic and cardiovascular surgery manual, slides and a video film demonstrating operation techniques); urology (e.g., protocols and criteria for urological surgery, uroflowmetric and urodynamic equipment manuals); ophthalmology (e.g., text on myopia surgery: anterior and posterior segments; ophthalmic plastic and reconstructive surgery text); nephrology (e.g., manual on dialysis); and laparoscopic surgery (e.g., laparoscopic cholecystectomy and laparoscopic appendectomy texts). Examples of patient education materials were also provided.

c. AIHA Inputs

The AIHA provided some Partnerships with office equipment and supplies, and supported Internet access when this was not already in place. Through the Internet, Partners could acquire the latest advances in medicine, as well as being provided with the opportunity for case consultation with colleagues. Through the annual meetings sponsored by AIHA, training courses to supplement Partnership trainings were provided, as well as additional opportunities to interact with colleagues (this was seen as a substantial benefit by NIS Partners, who reported that direct contacts with former Soviet colleagues were interrupted after the collapse of the USSR). In some cases, the AIHA facilitated shipments of equipment or helped hospitals in the NIS acquire additional supplies. In general, their role in supporting and helping to coordinate program activities was greatly appreciated.

2. Typical and Exemplary Outputs

Outputs for specialized training in clinical care were described in these four areas: a) organizational (management), b) financial, c) clinical, and d) community, region or country level changes. Typical and exemplary outputs in these four areas will be described in the sections below.

a. Organizational (Management) Outputs

Typically, new departments were created or existing departments expanded/reorganized to incorporate new procedures and technology. For example, a vascular surgery unit was established in Moscow for physicians to perform coronary bypass surgery; in Murmansk, the cardiosurgery department and vascular department were joined into one structural unit and a rehabilitation center was established to provide postoperative care for coronary patients. In the L'viv Oblast Clinical Hospital, a surgical room was dedicated to endoscopic surgery (urology) and an ultrasound diagnostics laboratory was created. A Center for the treatment of male infertility was created in St. Petersburg, a totally new field of treatment which was launched as a result of Partnership activities. The model surgical suites developed in Ashgabat for dialysis and for surgery have already been described. Services were typically reorganized to provide pre-admission work-ups on an outpatient basis, shortening the length of the hospital stay.

With the new expertise came the need for new positions and changes in job descriptions, as well as changes in the structure of staff relationships. Physicians and nurses developed team relationships: in the L'viv Railway Hospital, three physicians became qualified to use laparoscopy in diagnostics and surgery, with two nurses trained to work with them on these procedures. The most striking changes were in the role of nurses, with job responsibilities becoming significantly broadened: in Ashgabat, nurses for the first time could execute certain procedures without physician supervision; in L'viv (as elsewhere), policies were revised to incorporate more responsibilities for nurses in surgery and in infection control activities.

b. Financial Outputs

Few Partnerships reported changes in the financial area beyond revising purchasing programs to provide supplies for new surgical units. Many indicated that the (limited) budget was tightly controlled by the government, setting certain limits on modifications in this area. However, the L'viv Railway Hospital had established a for-profit Medical Services Department (along with a Laparoscopy Unit) through which they were able to cover the costs of some drugs and disinfectants purchased by the hospital, as well as the cost of patient food. This Hospital had also instituted a new system of review of all medical services provided by this Department, tracking insurance company payments.

c. Clinical Outputs

As described earlier, technology and training were provided to the NIS Partners which enabled them to implement new procedures in: cardiology (e.g., balloon angioplasty and coronary artery

bypass surgery); urology (e.g., transurethral resection of prostatic and bladder cancers, new parameters for diagnostics including transrectal multipositional ultrasound diagnostics, and treatments for male infertility); ophthalmology (e.g., vitreo-retinal therapy, laser therapy for diabetic retinopathy, more advanced diagnostics for eye disease, and cataract extraction); nephrology (e.g., hemodialysis and hemofiltration); and laparoscopic surgery (e.g., laparoscopic cholecystectomy and diagnostic laparoscopy). In Murmansk, they began to provide cardiac surgery for children (who weigh more than 20 pounds).

Coinciding with increasing responsibilities for nurses were changes in staff/patient interaction. Nurses (as well as physicians) became more involved in patient education, hospitals began intensive work with patients to prevent surgical complications. In Ashgabat, patient home visiting was initiated; St. Petersburg learned about the role of social workers in providing care after procedures (especially outpatient procedures in ophthalmology). In the L'viv Oblast Clinical Hospital, they reported that the decreased length of patient stay (for surgery and recovery) and use of less invasive techniques improved the general psychological state of patients which resulted in better understanding between patients and medical staff.

New procedures contributed to the need for new patient treatment protocols for pre-operative work-ups, surgical procedures and post-operative care, with nurses (as well as physicians) taking an active role. New protocols were also devised for anesthesiology and perfusiology, as well as the standard medical examination. Many Partnerships instituted new patient tracking procedures, using computer databases for these purposes. In the L'viv Oblast Clinical Hospital, they began to use special individual cards for the registration of patients and a computer database for patient operations which allow them to monitor medical treatment effectiveness.

d. Community, Region or Country Level Outputs

As previously described, some of the training received by NIS Partners was in a Train the Trainers type of format. Case consultation and training for the city, region and country was the most typical kind of output at this level. In Ashgabat, the Medical Consultive Center is the training base for the physicians from other regions in Turkmenistan, the base for professional and qualification development in the field of dialysis treatment. (This Center provides care to patients suffering from chronic and acute renal insufficiency from other regions of the Republic.) The L'viv Oblast Clinical Hospital has trained many urologists from Khmelnytsk, Cherkassy, Volyn and other regions. An information exchange on laparoscopic surgery has been established between the L'viv Railway Hospital, L'viv State Medical University and the Hospital of Veterans of War.

Some Partnerships indicated that new standards and/or policies had been established in their country as a result of these Partnership activities. For example, in the Ukraine, new technology issues have been included in the requirements for professional certification of urologists; transurethral invasive techniques have been added to the program for medical staff professional training. St. Petersburg indicated that an early detection program for prostate cancer will be promoted at the hospital and within the regional service area.

3. Model Outcomes

Outcomes for specialized training in clinical care will be presented below in these three areas:

a) organizational (management), b) financial, and c) clinical changes. No quantified outcomes were reported at the d) community, region or country level.

a. Organizational (Management) Outcomes

Potential outcomes include: measurable increase in the quality of care (patient satisfaction); a measurable increase in staff efficiency; and a measurable decrease in patient length of stay related to inputs and outputs in this program area. As indicated, many of the procedures had not been available prior to implementation through the Partnership. For example, transurethral operations were not performed at L viv Oblast Clinical Hospital before 1995; in the next 3 years, 641 operations were completed. The average length of hospital stay for patients with prosthetic and bladder tumors was 15-20 days in 1993, compared with 6-7 days in 1997.

St. Petersburg anecdotally reported high patient satisfaction in their male infertility center, particularly as they were serving a population who had not been served before.

b. Financial Outcomes

Potential outcomes included: evidence of cost savings; evidence of new sources of revenue; and evidence of reduced deficit related to inputs and outputs in this program area. Many Partnerships reported decreased average operative time (e.g., average operative time in cardiology in Murmansk decreased from 7 - 8 hours to 4 hours) and decreased length of stay, but were unable to quantify the cost savings contributed by these changes. However, the L viv Railway Hospital was able to document that the average length of stay associated with a laparoscopic cholecystectomy was 3.5 days (compared to 10-11 days after traditional surgical cholecystectomy); the total profit for the hospital associated with this amounted to approximately 5,000 US dollars. This hospital also reported that 400 patients were admitted through their newly developed for-profit Medical Services Department; the equivalent of approximately 15,000 US dollars had been obtained by the hospital as fees for medical services provided to these patients. Significantly, all Partnerships reported that these new programs will be sustained.

c. Clinical Outcomes

Partnerships were asked to report measurable increases in the quality of clinical care (evidence of reduced morbidity/mortality) related to inputs and outputs in this program area. Many reported that morbidity and/or mortality rates had declined, but were unable to quantify this information. For example, St. Petersburg indicated that they were now doing research to determine the rate of male infertility in Russia; this was not previously documented. The L'viv Oblast Clinical Hospital was able to report that improved diagnostics of early stages of bladder cancer and the use of minimally invasive operations resulted in a decreased rate of cancer recurrence (11.8 percent 2 years post surgery compared to 30 percent described in the literature). Murmansk demonstrated an increase in the number of cardiosurgery procedures with a correspondent decline in mortality and morbidity.

IV. PERSONAL AND PUBLIC HEALTH ALIGNMENT

A key element in USAID's strategic objectives and Mission strategies is developing a closer alignment of personal health and public health efforts. Although the original conception of the AIHA partnership program focussed on the transfer of medical knowledge related to personal health, many Partnership efforts took on a more traditional public health role. This chapter will describe the NIS/CEE Partner's self-assessment of those efforts, including programs which focussed on:

- A. Community Health/Healthy Communities;
- B. Emergency Medical Services; and
- C. Infection Control.

As with the previous chapter, the structure for describing findings in each program area (except for Community Health/Healthy Community Initiatives) includes:

- 1. a description of the pre-existing conditions in the program area;
- 2. key inputs described in the self-assessments;
- 3. typical and exemplary outputs described in the self-assessments; and
- 4. model outcomes achieved by the Partnerships in the program area.

A. Community Health/Healthy Community Initiatives

Five Partnerships (all in the CEE) completed self-assessments on programs focusing on community health/healthy community initiatives. This included four Partnerships in Slovakia specifically created to focus on this program area, and a Partnership in Latvia which concentrated on community health as one of their many initiatives.

1. Pre-Existing Conditions

The World Health Organization's (WHO) Healthy Cities Project, begun in 1988 and active in numerous cities, provided some of the impetus for the community health/healthy community initiatives. Community health objectives target the well-being of the community, seeking to empower individuals and municipalities to assume greater responsibility for their own health. These efforts seek to make improvements in access to health, inspire lifestyle change, and create healthier environments. Each Partnership's initiatives addressed the issues which were of primary concern to their community.

The Aid to Children at Risk Foundation (ACR) reported on their work in Petržalka, a densely populated area in Bratislava, which is Slovakia's largest city. This area in Slovakia experiences

severe overcrowding and high unemployment related to a dramatic increase in population in the early 1990 s. ACR teamed with Truman Medical Center in Kansas City, Missouri, to focus on drug abuse, sex education/AIDS prevention, and mental health issues, including family violence.

The MetroHealth System in Cleveland, Ohio, worked with three cities in Slovakia: Turcianske Teplice, Martin, and Bansk Bystrica. Their first Partnership was with Turcianske Teplice, a small, rural town in central Slovakia, which has a thermal spa for orthopedic, rheumatoid, and urological problems. However, there is no hospital in Turcianske Teplice and no fast rescue service; emergency patients were transported in old ambulances resulting in late arrivals to the Faculty Hospital in Martin. Beyond addressing the issue of timely access to care, Partnership strategies targeted a decrease in the use of tobacco products and a decrease in the number of cardiovascular illnesses. Martin identified cardiovascular diseases as the most frequent cause of mortality for their population, followed by cancer. Their community health strategies focussed on factors associated with these diseases, including smoking, diet, physical activity, and stress. Bansk Bystrica has a substantial elderly population; this city identified the need to address insufficient health-care services for the elderly and chronically ill within their community, inadequate models of home care funding, and delayed reimbursement by insurance companies.

The Partnership between Riga, Latvia and the Barnes-Jewish Hospital/BJC Health System in St. Louis, Missouri (US) addressed health promotion in the Tukums region (a rural area) as one of their many programs. This group cooperated with WHO Healthy Cities efforts, and built on a Latvian tradition of self-responsibility for health and healing. They launched a broad based community outreach program in health education, focusing on general topics of first aid and nutrition, as well as addressing family planning needs (e.g., decreasing teenage pregnancy; developing sexual responsibility) and school health (expanding an existing program).

2. Key Inputs

Inputs will be described in three areas: a) activities during exchange visits between the US and CEE partners; b) equipment, supplies and educational materials provided by the US partners; and c) inputs provided by AIHA.

a. Exchange Visits

A primary input for each Partnership was exchange visits. Up to ten visits to the CEE sites were made during the Partnership by the US. In general, early visits were designed to help appraise community needs and assets, and assist CEE partners in organizing community task forces who

would identify and prioritize their community's goals and objectives. Later visits provided training and consultation to assist CEE Partners in selecting and implementing strategies. Training topics included: community needs assessment and SWOT (Strengths/Weaknesses/Opportunities/Threats) analysis; partnership building/cooperation; health care and health service management; Nursing Out of Hospital Settings ; and a seminar on abused children. These trainings were attended by a variety of participants depending on the topic. Participants included: health care professionals, teachers, public officials and city administrators, teachers, social workers and other representatives of social service agencies. CEE partners were very successful in securing the support of their local government, which was very important to the overall success of the project.

Up to nine visits to the United States were made by each CEE Partnership. During these visits, CEE participants had an opportunity to experience the US system firsthand through site visits, and participate in seminars and forums which provided an in-depth understanding of the relevant issues and conditions. Topics for these training sessions included: "Role and Advocacy of Local Government in Health Reform"; and "The Changing Role of Physicians and Other Health Care Professionals". One nurse from Latvia visited the US to learn effective health education approaches when working with children. As one respondent from Martin indicated: Our trips to Cleveland were very useful and inspiring. We got to know a lot about the system of US health care, social care, volunteerism and fundraising. We visited a number of institutions that could serve as models for our system, e.g. American Cancer Society, American Heart Association, United Way, Hospice, Mandel School, Federation for Community Planning, The Health Museum, Elder Care, and others.

b. Equipment, Supplies and Educational Materials

Another important type of input provided by the US partners included major equipment and educational materials. Typically, US Partners provided office equipment to support Partnership activities (e.g., computer hardware, software and manuals; copiers; fax machines; televisions and VCRs), as well as supplies and educational materials which would assist in community education activities (e.g., a model which illustrated the effects of smoking; a teaching kit on cardiovascular diseases; videos on substance use and on breast self examination; CD-ROMs describing the prevention of chronic non-communicable diseases; books/manuals on CPR, sexually transmitted diseases, clinical epidemiology, clinical quality improvement, or domestic violence). The Partnership in Turcianske Teplice was also provided with ambulance equipment; ACR was provided with furniture for their Hope House (directed at family violence and drug addiction).

c. AIHA Inputs

The AIHA assisted in providing major equipment and educational materials. One of the most important examples of their input was the establishment of a Learning Resource Center (LRC) for each Partnership. This included computers, printers, modems, telephone lines and fees for connection to the Internet; trainings were provided for information coordinators on accessing the Internet. As one respondent from Turcianske Teplice described, this linkage provided new possibilities of getting experience and knowledge from the whole world - direct connection to information of all kinds. AIHA also sponsored seminars, including a training for CEE Partners in core skills of Health Care Management, and annual meetings of the US and CEE Partners, which provided the opportunity for this subset of Partnerships to establish relationships with each other, and benefit from each others experiences.

3. Typical and Exemplary Outputs

Outputs for community health/healthy community programs were typically in these three areas: a) building a community coalition; b) assessing the needs of the community; and c) developing and implementing community health/healthy community intervention activities. Typical and exemplary outputs in these three areas will be described in the sections below.

a. Building a Community Coalition

Each Partnership formed a community coalition, which included representatives from the key institutions and groups within their community. Such coalitions are an important part of empowering citizens to take responsibility for the health of their communities; they also facilitate the important process of bringing together key stakeholders to agree upon then implement community intervention activities. Members of coalitions included: representatives of schools and academia, city administrators and elected officials, health care providers, social service care providers, religious leaders, police officers, and members of the business community. Exemplary coalitions also involved citizens who were to benefit from coalition activities. Coalitions met at varying intervals; these coalitions were often organized by steering committees, which met from twice a month to once every two months, depending on the needs of the community.

The work of these Partnerships, through their support of community coalitions, resulted in new collaborations within the cities which should, over time, improve service delivery and ultimately the health of the community. For example, in Banská Bystrica, communication improved among government agencies, private entities and non-profit organizations involved in the provision of health and social services within the community. Individual organizations cooperate and coordinate their activities more than ever before. The Partnership activities resulted in specific agreements on cooperation between a private polyclinic, the Secondary Nursing School, F.D.R.

Hospital, private physicians and home care agencies. City Hall has prepared a project for the privatization of the currently state-owned polyclinic and intends to operate it. In order to enhance the cooperation, we established the alliance Health Forum. The chairperson is the Chief of the Social and Health Committee of the City Council.

b. Assessing the Needs of the Community

Each Partnership supported some type of data collection effort designed to identify the baseline conditions in the community in terms of their health status, health practices/use of health services, and/or health-related perceptions. In some cases this involved the use of existing or newly developed survey instruments; data collection efforts also included focus group discussions in some of the cities. The Latvian Partnership used newly developed surveys (e.g., concerning nutrition, and concerning sexual choices), and indirect data from local hospitals and from the Ministry of Health to develop a profile of the health in the Tukuma Region. Martin reviewed pre-existing demographic as well as survey data (a study on the prevalence of smoking and attitudes to smoking in the county); they also conducted a retrospective study: "Community Health Assessment" and a prospective study: "Smoking in Families with Small Children" using newly developed instruments. To expand their understanding of these issues, focus groups were convened in Martin which included groups of high school students, parents of children aged 0-3, and medical students. The coalition in Banská Bystrica was able to review pre-existing demographic data and data on social-economic indicators relevant to the goals of the community, as well as survey city councilors and citizens. This city utilized university students to distribute and process the surveys as part of their work for their degree. US Partners also assisted in survey efforts: in Turčianske Teplice, their survey "Stress effects on parents and children" was analyzed in the US.

Some Partnerships were still analyzing some of their data; all had begun to utilize and disseminate some of the information they generated. In Banská Bystrica, the results of their survey were disseminated to the City Councilors, who were also informed of the City Health Plan which will address all the issues and problems recognized through the survey. Turčianske Teplice created a profile of the town reflecting the current health status of their inhabitants.

c. Developing and Implementing Community Intervention Strategies

Following the development of a coalition and needs assessment activities comes the essential task of establishing consensus on community health/healthy community program priorities. Developing consensus is a significant output ; this was achieved in each of the five Partnership communities as represented by their Health Action Plans. Each community, as previously described, focussed on the general goal of improving health status and promoting healthy life styles for community members, including smoking and substance abuse prevention. More specific program priorities and activities will be described below for each community. It should be emphasized that these activities will be sustained beyond the termination of AIHA/US AID funding for Partnerships. Coalition efforts will be sustained through cooperation with academic institutions, through financial support from their cities and private donors, and through activities undertaken by the State Health Institute and volunteers.

In Petrzalka (Bratislava), ACR focussed in particular on drug abuse and family violence. Community coalition activities included: establishing a community foundation; carrying out anti-drug education forums, which included education aimed at preventing the transmission of HIV; and creating the Hope Center, with a 24-hour hotline to address family violence and drug addiction. ACR has advocated for similar activities in other towns in Slovakia.

The city of Turčianske Teplice and the villages of the Region of Turiec, established the Sanitka (Ambulance) Foundation with the objective of providing a fast rescue system in an emergency; this led to the purchase of an ambulance. They cited as their most successful strategy the City Health Center and programs provided by the Center, which include an anti-smoking project and disease prevention project. Schools are requesting health promotion and education for their curriculum, and citizens have demonstrated their interest in their own health by their voluntary visits to the Health Center. Perhaps one of the most important outputs is the change in attitude evident in this respondent's statement: the success story of Turčianske Teplice has inspired us and, unlike in the past, we are fully confident that small communities can do great things.

Martin's community health strategies focussed on factors associated with cardiovascular diseases and cancer, including smoking, diet, physical activity, and stress. The community coalition has worked successfully with the regional media and local schools, offering programs on regional television and radio and educational programs for elementary schools and pre-school facilities; one school joined a WHO program of Healthy Schools. On World No-Tobacco Day they organized a "Tangerine for Cigarette" campaign, during which local eight-graders explained tobacco-related hazards and swapped tangerines for cigarettes with people smoking in the street at several

"tangerine check-points" in town. Focusing on this same issue, they facilitated the passage of a municipal ordinance implementing the Non-Smokers Protection Act in Martin County. Another community-based initiative focussed on vaccination against invasive hemophilic infections, leading to the policy: Instruction No. 2284/1997 dated 10/29/1997, "Indicative list of vaccination substances against infections caused by Haemophilus Influenza, fully reimbursable by insurance companies." A press conference concerning this was held in the Cardinal's Palace in Bratislava for the national media, followed by a public discussion with the citizens of Bratislava (at the request of the Lord Mayor's Office). Coalition efforts helped furnish an in-patient hospice facility, and change the role of nurses in primary health care. They have disseminated their work through conferences (including conferences they have organized with international participation) and publications, including articles in the Central European Journal of Public Health.

Bansk Bystrica identified the need to address insufficient health-care services for the elderly and chronically ill within their community. Action plans for the delivery of health and social services to the elderly have been developed; they have learned to implement strategic planning and have increased the volume of health and social services provided in the city by 20 additional beds in the geriatric department of F.D.R. Hospital and 16 additional beds for in-patient nursing care in the Jesen Home. City Hall has prepared a project for the privatization of the local polyclinic. They have established direct contacts and cooperation between the Catholic Charities of the Bansk Bystrica diocese and the Catholic Charities of Cleveland. It should also be mentioned that in Bansk Bystrica, as with each of these sites, the relationship with their US Partner will continue beyond the financial support of AIHA, primarily through E-mail.

In the Tukums region in Latvia, community health activities included a broad based community outreach program in health education: first aid training was carried out in enterprises and in schools, reaching over 3,000 individuals. Community health education topics included: infectious disease prevention, nutrition, and adolescent sexual responsibility. They secured support from the Soros Foundation for materials and training costs, adapting existing materials for special populations and using lecturers from state health care institutions (the Tukums local government also partly covers some of the expenses). Students were found to be a particularly effective way to disseminate information: using a train the trainers model, students were instructed in the use of a variety of techniques to address priority areas with preschool and school age children, peers, parents and elders. This Partnership has been asking these student team leaders to track their activities and evaluate their participation; they have also sought input from community members.

4. Model Outcomes

It is difficult to achieve measurable improvements in the health status of the community, region or country related to community health/healthy community partnership activities within such a short time frame. Many Partnerships indicated that progress in this area is slow: people do not view health issues as a top priority, because they are overwhelmed by various social and economic concerns. There are also political barriers: there is an absence of appropriate legislative tools that would facilitate the process of health care transformation, and authorities of the central government are not cooperative enough to pay adequate attention to the solution of problems at the local level. Some Partnerships have implemented evaluation plans which should, over time, assess the impact of their activities. For example, in Martin, they are initiating periodic evaluation of epidemiological indicators of smoking prevalence in the community and evaluation of intervention activities; intervention activities will be adjusted based on the outcome of the evaluation. The ACR in Petrzalka did cite in their self-assessment that the officers at the General Secretariat of the Governmental Office for Anti-Drug Activities have stated a stabilization in the number of drug addicts and a change of attitude of youth to drugs within the Petrzalka community; however, the source of the data to support this statement was not known.

B. Emergency Medical Services

The activities of ten Partnerships that assessed their Emergency Medical Services (EMS) initiatives will be described in this section. Many of the Partnerships were with newly established EMS training centers or ambulance service systems; in Chisinau, Semipalatinsk, Tirana, and Yerevan the Partnership included emergency hospitals. These initiatives were usually directed to urban areas. The ten Partnerships include one in the CEE: the Central Trauma Hospital in Tirana, Albania; and nine in the NIS: The Emergency Scientific Medical Institute in Yerevan, Armenia; the newly developed EMS Training Center in Tbilisi, Georgia; Oblast Clinical Hospital and Emergency First Aid Hospital in Semipalatinsk, Kazakhstan; the newly developed EMS Training Center, the Republican City Hospital, City Ambulance Hospital and Moldova Medical University in Chisinau, Moldova; the newly developed EMS Training Center in Moscow, Russia; the newly developed EMS Training Center in Vladivostok, Russia; the newly developed EMS Training Center in Ashgabat, Turkmenistan; the Donetsk Oblast Trauma Hospital in Donetsk, Ukraine; and the newly developed EMS Training Center in Kiev, Ukraine.

1. Pre-existing Conditions

Emergency medical services in the NIS countries had many problems prior to 1991 which were only exacerbated by the decline in financial support from the public sector. The paramount

problem was poor organization. Sometimes hospitals had the responsibility for transport of critically ill patients. In other instances, militia or fire squads were responsible. Linkages among units and between units and hospitals were usually non-existent. Added to these problems were the lack of modern equipment and appropriate medical transport vehicles. Finally, training for emergency medical personnel was limited. Reliance devolved on physicians accompanying transports.

The particular Partnerships that participated in this initiative reflected these issues. For example, in Chisinau, Moldova the City Ambulance Hospital and Republican Clinical Hospital were involved in the Partnership; there was a need to reorganize the systems and improve and upgrade the training program. In Tbilisi, Georgia the main difficulty was poor and inadequate equipment. Similar difficulties were highlighted in Kiev, Vladivostok, Yerevan, Moscow and Ashgabat.

2. Key Inputs

Inputs will be described in three areas: a) activities during exchange visits between the US and NIS/CEE partners; b) equipment, supplies and educational materials provided by the US partners; and c) inputs provided by AIHA.

a. Exchange Visits

An average of 19 visits to the NIS/CEE sites (a range from 1 to 72 in the Partnerships that reported this information) and an average of 12 visits to the US (a range from 1 to 48 in the Partnerships that reported this information) were made in this program area. Since the Partnerships concentrated on a select group of trainers, the exchanges between the partners was usually limited to approximately 10-20 participants making two or more visits to their respective partner sites. The one exception was the Armenian Partnership which had over 200 participants in the US and 80 Americans in Yerevan. Since the EMS training initiative had a singular focus, it was easier to concentrate the training to particular sites in the US and the NIS. Almost all of the Partners participated in the NIS workshops in Vladivostok (1995 & 1996); L viv (1996), Kiev (1997) and Moscow (1997). Similarly, almost all participated in the US meetings in Richmond, Virginia in 1995. Several Partners also participated in the special sessions on nuclear disasters at Oak Ridge, Tennessee in 1997. Individual Partnerships attended meetings in the NIS or US on related subjects such as information services, marketing, management and infection control.

All of the Partnerships were provided with the opportunity to practice their learning experience in the US. Since they actively made runs with their colleagues, they developed a better

understanding of the organization of the EMS services and the consistent application of skills that were contained in training materials. The Ashgabat partners stated, our specialists see with their own eyes and understand better what they need to do to improve the quality of the work. The Moldova Partnership saw as valuable the ability ...to learn and implement the pedagogical experience of our American colleagues.

b. Equipment and Supplies

The primary input in all the Partnerships was the initiation of the standardized EMS training program developed in the US, adapted to the needs of individual Partnerships. Since the program focussed on the train the trainer concept, each Partnership received extensive training material, books and protocols to set up their training programs. The Vladivostok Partnership received an extensive library from its US partners.

Included in the vast array of material received from US Partners were training mannequins, video equipment, slide projectors and supplies required for training purposes. In Yerevan, the US Partner donated an ambulance, 20 cardiac monitors, 3 anesthesia machines, 5 ECG machines, a video-conferencing set-up and a fully equipped intensive care unit and emergency room.

c. AIHA Inputs

The AIHA provided all of the communication equipment in the form of computers, fax machines, etc., and in many instances, extensive training equipment. The Partnerships universally praised the establishment of Learning Resource Centers, which enabled access to state of the art information in the field of emergency medicine. The Vladivostok Partnership has created a home page on their web site. The Partnership in Yerevan also has teleconference capability in its center.

The most essential AIHA role, aside from overseeing the exchanges, was the organization of regional meetings on a variety of subjects related to EMS, and sponsorship of the special EMS training event at the annual AIHA Partnership meetings. In the most recent meeting in Atlanta, Georgia (US), all of the EMS programs conducted a mock disaster drill to display their expertise. Several partners expressed the value of the AIHA inputs; the Moldova Partnership stated it best: Thanks to AIHA activities and financial support, we could work out our own program of EMS.

3. Typical and Exemplary Outputs

Outputs for emergency medical services initiatives were described in these four areas: a) organizational (management), b) financial, c) clinical, and d) community, region or country level changes. Typical and exemplary outputs in these four areas will be described in the sections below.

a. Organizational (Management) Outputs

Consistently across the EMS Partnerships the partners reported extensive reorganization of their present services, improved team work and more refined job descriptions and responsibilities. The Kiev Partnership has set up a new hospital unit based upon recommendations of their American colleagues. The Yerevan Partnership reported an increase in general resuscitation teams by 30 percent and placed a learning coordinator in all ambulance stations. This Partnership upgraded the Level III Trauma Center in the city to Level II (now a territorial establishment that provides specialty care). In Semipalatinsk, the Emergency First Aid Hospital and the EMS station became a single functional unit. The Chisinau Partnership has created a new EMS Training Center. A similar training center was established in Vladivostok, and the program has undergone extensive restructuring with new job descriptions and new management principles.

b. Financial Outputs

Many of the Partnerships indicated that they instituted new purchasing programs to reduce the cost of supplies. The Kiev Partnership has been able to expand its funding base with new programs for EMS services and training. The Vladivostok Partnership was able to get approval from the Primorsky Krai Health Care Department for a new regional program: Enhancing the EMS System 1997-2000.

c. Clinical Outputs

The greatest changes documented by all the Partnerships were in the clinical area. All the standard EMS approaches to patient care were instilled in the training program -- triage, stabilization, immobilization, resuscitation and transportation of patients. Several Partnerships also introduced advanced life support systems. The Yerevan Partnership introduced cardio-pulmonary resuscitation and assisted ventilation. Since this Partnership included an Emergency Medical Center, the advanced techniques for ER treatment of trauma, shock, and cardio-vascular stabilization were also introduced. The Chisinau Partnership introduced new methods for intensive care, including cardiac and lung reanimation.

Emergency crews have been equipped with mobile phones, and keep close 24 hour contact with hospitals in their region. There is a new system in place for mapping of calls (which improves response time). Also in the area of improved record keeping/information gathering, the Kiev Partnership reported an interesting emphasis on the issuance of a pre-hospital card for citizens prior to admission to the hospital. This card provided valuable information on the patient's history which

could complicate emergency interventions such as the introduction of drugs contraindicated for the patient.

In all of the EMS programs, the greatest output was the ripple effect created by training the trainer and in turn having these trainers work with their colleagues. The extent of the numbers of those trained is extensive. The Yerevan Partnership had over 1,600 EMS personnel (physicians, nurses and paramedics) trained or retrained. The Chisinau City Ambulance Hospital exposed over 3,000 employees to the training. The Vladivostok program graduated 2,480 students, 232 paramedics and 901 school children; they provided advanced EMS training for their ambulance stations. The Georgia EMS center trained 677 physicians, 75 nurses and 69 members of various emergency response teams.

Each Partnership had a continued commitment to the training of paramedics. This means that the numbers trained will continue to increase and the skill base of ambulance squads will improve significantly. Several Partnerships cited changes as well in the behavior of medical personnel, which can be summarized by this comment: they have started to treat the patient as an individual rather than just a walking diagnosis.

d. Community, Region or Country Level Outputs

The obvious output from these Partnerships at the community or regional level is the upgrading of paramedics skills. In addition, several Partnerships reported significant changes in regional or national guidelines and/or certification. The Armenian Ministry of Health approved the training for the specialty intensive and critical care and the mandatory licensing of emergency medical personnel. A similar certification program was instituted in Moldova and the Ukraine. In Vladivostok the Primorsky Krai Health Care Department has instituted several guidelines for the operation of the emergency care services, as well as a certification program for paramedics and for physicians. In Georgia, the Ministry of Health has confirmed a post diploma certificate for emergency medicine. In Russia the Federal Directorate for Biomedical Problems and Disaster Medicine issued a ruling on the Qualifications of Paramedical Personnel that assigned a degree for the graduate of the EMS Training Center.

All of the Partnerships were exposed to disaster response protocols and many, such as Vladivostok, Chisinau and Yerevan, have identified some form of response to disasters in their region. In Semipalatinsk the EMS system developed a plan of action for emergency situations at the nearby nuclear reactor station.

4. Model Outcomes

Several of the Partnerships were able to cite anecdotal information on the impact these programs had on their communities. Some Partnerships were able to document changes in response times and in outcomes. We will highlight these in this section. As with the outputs section, outcomes for emergency medical services initiatives will be presented below in these four areas:

a) organizational (management), b) financial, c) clinical, and d) community, region or country level changes.

a. Organizational (Management) Outcomes

Potential outcomes include: measurable increase in the quality of care (patient satisfaction); a measurable increase in staff efficiency; and a measurable decrease in patient length of stay related to inputs and outputs in this program area. In Yerevan the Emergency Scientific Medical Center conducted a survey of intensive care unit patients after implementation of new protocols and training efforts by Boston University. Some 80 percent of respondents indicated their complete satisfaction with the services received. In this same Partnership, staff efficiency and capability occurred when medical professionals who did not achieve credentials were laid off. In Georgia the Partnership identified a 22 percent improvement in the field of emergency aid. This same Partnership measured improvement in the skill base of the trainees in basic emergency intervention in the field for patient stabilization. The Vladivostok Partnership also documented similar improvements in their ability to accurately diagnose and treat patients in the field.

In a related organizational outcome the Chisinau Partnership, which was also a hospital Partnership, reduced average length of hospital stay (LOS) from 12.9 days in 1993 to 12.3 days in 1997 as a result of new guidelines for hospitalization. Yerevan reported a similar decline of 30 percent in hospital LOS. The Semipalatinsk Partnership pre-hospital intervention for types of trauma was also reported to have reduced hospital stay.

b. Financial Outcomes

Potential outcomes included: evidence of cost savings; evidence of new sources of revenue; and evidence of reduced deficit related to inputs and outputs in this program area. As a result of enhanced training, many of the Partnerships have either convinced local authorities to upgrade equipment or have received external support from foundations. This was especially true in

Yerevan which received extensive equipment from the Armenian Diaspora in the US. The Chisinau EMS Training Center identified a \$237,000 (US dollars) savings in funds that the hospital did not have to commit to training as a result of the education provided by the training center. The

Vladivostok EMS Training Center documented savings in drug purchases and income from training groups that paid for instruction. The Tirana project has received support from the World Bank.

c. Clinical Outcomes

Partnerships were asked to report measurable increases in the quality of clinical care (evidence of reduced morbidity/mortality) related to inputs and outputs in this program area. Two general areas of improvement were cited by several Partnerships: reduced response time and improved outcomes in the field. Yerevan reported an increase in paramedic responses to serious calls; Chisinau reported improvements in mapping calls and a reduced response time of 10 minutes. Vladivostok also reported improvement in overall response time.

Significantly, several Partnerships were able to document measurable improvement of care and therefore outcome. The Vladivostok Center reported a decrease of 18.9 in the percentage of pre-hospital diagnosis in the field compared to actual admitting diagnosis in the hospital. This meant that better patient treatment could occur across the continuum of care. The Yerevan project identified a percentage decline in mortality rates (1995-7) of 10.5 percent for head injuries; 14.3 percent for spinal cord injury; 6.1 percent for multiple trauma; and 2.1 percent for myocardial infarction.

d. Community, Region or Country Level Outcomes

In their qualitative self-assessments, these Partnerships document the impact that their successes have had on the political structure of their city, region or nation. These Partnerships have had an obvious impact on the creation of new regional or country level policies, procedures, and credentialing in the area of emergency medicine. However, there is as yet no adequate baseline to measure outcomes over a large population base. This should not take away from the important contribution made by these Partnerships. They all believed their programs would be sustained; the impact of these programs will continue for a long time after the ending of AIHA support. As in the US, the process of self perpetuation of paramedic training occurs because of the cadre of trainers and the requirement of government agencies for appropriate credentialing.

C. Infection Control

Infection control was a prevailing concept throughout all of the clinical Partnerships in both the NIS and CEE. Although each Partnership addressed infection control issues in some capacity, this section will describe the fifteen Partnerships which provided a quantitative self-assessment of their programs to control nosocomial infections. These Partnerships included three in the CEE: University Hospital Center Mother Theresa, University Maternity Hospital and Central Trauma Hospital, in Tirana, Albania; Zadar General Hospital in Zadar, Croatia; and the Latvian Medical Academy's Clinical Children's Hospital in Riga, Latvia; and twelve in the NIS: Emergency Scientific Medical Center of the City of Yerevan, Armenia; Erebuni Medical Center also in Yerevan, Armenia; Kazak Scientific Research Center of Pediatrics and Children's Surgery in Almaty, Kazakhstan; Pirogov First Municipal Hospital in Moscow, Russia; Murmansk Regional Hospital and City Ambulance Hospital in Murmansk, Russia; Stavropol Regional Hospital and City Hospital No. 4, in Stavropol, Russia; City Clinical Hospital No. 2 in Vladivostok, Russia; City Medical Center in Dushanbe, Tajikistan; Donetsk Oblast Trauma Hospital in Donetsk, Ukraine; Center for Maternal and Child Health Care of the Left Bank in Kiev, Ukraine; Lviv Railway Hospital in Lviv, Ukraine; and Odessa Oblast Hospital in Odessa, Ukraine.

1. Pre-existing Conditions

Prior to the Partnerships, there were limitations in resources available to hospitals, EMS services, polyclinics and other ambulatory settings which created problems for infection control. There was limited access to single use supplies, anti-bacterial soaps and emulsions; there were inadequate sterilization procedures and equipment. More importantly, there were ingrained attitudes and behavior that allowed the persistence of interventions that were ineffective or ill-advised in reducing nosocomial infections. Delays in early identification and lack of specifics of the typology of the infective agent led to excessive use of antibiotics as a prophylactic regimen or misuse of the strongest antibiotics for infections not requiring their intervention. Finally, long hospital stays and movement of patients throughout the hospital setting resulted in cross-infections. In general, the infection control program encouraged by AIHA and the clinically related Partnerships responded to all these problems with the approach to control of nosocomial infections that has prevailed in US hospitals and health care settings.

The major attitudinal shift documented by the Partnerships was a movement away from environmental control of infection to patient specific control of infection. Before the Partnerships, almost universally the control of infection had been relegated to an external agency -- a regional hygiene or sanitation department - responsible for the sanitary condition of the facility and for

significant outbreaks of infection. There was not the focus on patient specific infection that would initiate isolation, treatment, and cure with an immediacy that could prevent serious consequences to the patient and to other patients and staff. This shift of emphasis from external to internal control resulted in dramatic organizational changes in the delivery site. It led to more unified control across departments, more rapid response to the identification of the source of sepsis, and a more tailored approach to its elimination.

2. Key Inputs

Inputs are described in three areas: a) activities during exchange visits between the US and NIS/CEE partners; b) equipment, supplies and educational materials provided by the US partners; and c) inputs provided by AIHA.

a. Exchange Visits

An average of 8 visits to the NIS/CEE sites directed at this program area were made during the Partnership by the US (a range from 3 to 20 in the Partnerships that reported this information); and an average of 8 visits to the United States were made by the NIS/CEE Partnerships (a range from 1 to 24 in the Partnerships that reported this information). Most Partnerships had between 15 to 30 participants exchanged between the NIS/CEE countries and the United States, although 200 participants from Yerevan (the Partnership with the Emergency Scientific Medical Center) traveled to the United States. The Partnerships in the NIS/CEE were able to see the effectiveness of infection control in the US hospital setting, which was a motivation to transfer this information back to their Partnership site. Trainings during the exchanges focussed on infection control and related clinical issues, including train the trainers meetings on the prevention of nosocomial infections. The Vladivostok Partnership attended several major workshops in Richmond on surveillance systems related to nosocomial infections. Invitational workshops were held for the NIS in Golitsyno (1994), St. Petersburg and Odessa (1995); in the CEE countries several workshops on infection control were held in Zagreb (in 1996 and 1997). In addition to these invitational workshops, most of these Partners held workshops within their own area and region. For example, the Kiev Partnership developed six workshops, which were attended by almost 500 participants. The Latvian Partnership held a series of workshops for residents, students, and doctors with a total of almost 1,000 participants from around the country.

b. Equipment, Supplies, and Educational Materials

Along with the exchange visits that occurred, the US Partners provided a host of materials to be used in the Partnerships in the NIS/CEE. Aside from software programs and in some instances

additional computer technology, the majority of supplies and information that were extended to the Partners from the United States were knowledge based materials such as textbooks, guidelines and protocols. Most of the guidelines (for control of nosocomial infection) were either international or national in scope; protocols were provided for physicians and nurses in the different settings where they practiced. In Yerevan, for example, emphasis was placed upon the role of infection in emergency medicine in the field as well as emergency medicine within the trauma center. In Vladivostok, the focus was on the bacterial lab and the introduction of the WHONET training manual. In many of the Partnerships the internationally recognized red book on nosocomial infections became the standard for improving infection control throughout the hospital.

c. AIHA Inputs

A major input provided by AIHA were the workshops that were sponsored at each of the annual meetings (e.g., St. Petersburg, Des Moines, and Atlanta) which stressed infection control procedures as a major component of the meeting. During the annual meeting in Atlanta, GA (US) in 1997, the participants in the Partnerships were able to attend seminars at the Center for Disease Control (also located in Atlanta). In the Yerevan Partnership several programs were launched using the teleconference capabilities that this Partnership had available through the support of AIHA. The teleconferences were focussed on infection control and described techniques that were prevalent in US hospitals for the control of nosocomial infection.

Another important part of the AIHA contribution to the Partners was the creation of a Learning Resource Center with the equipment necessary (computers, hardware, software) for the education of physicians, nurses, and managers in health care settings. The materials provided included software packages, protocols, and information that had as their theme control of infection in hospitals and other health care settings. Of special interest was the distribution of EpiInfo, which models the way in which hospital epidemiologists work to determine sentinel events in infection and eliminate these events through a concerted effort of infection control. For laboratories of several of the Partners the AIHA provided the software program WHONET, which helped to establish a much more sophisticated bacteriological lab technique to determine the type of infection that was plaguing a particular health care setting. In addition to providing these information bases to the Partnerships, the AIHA also sponsored workshops on the implementation of both the EpiInfo and WHONET approaches to infection control.

3. Typical and Exemplary Outputs

Outputs attributable to the program of infection control were described in four areas:

a) organizational (management), b) financial, c) clinical, and d) community, region or country level changes. Typical and exemplary outputs in these four areas will be described in the sections below.

a. Organizational (Management) Outputs

Two major outputs were evident in almost all of the Partnerships in the organizational (management) area: the identification of one or more epidemiologists in the hospital or health care setting responsible for the overall control of infection; and along with this position, the establishment of an infection control committee that cut across all hospital departments in order to identify the source of infection before it became prevalent throughout the hospital. In Murmansk, for example, a clinical epidemiologic position was introduced in all the hospitals and polyclinics in the Murmansk metropolitan area. There were nine such health care institutions in Murmansk and six in the entire region. In addition, an infection control committee was established under the aegis of the Murmansk Health Care Department. In each of the Partnerships in Yerevan, infection control committees were established in their respective institutions; each of these oversight committees were trained in the way to approach control of infection within their hospital setting. The Moscow Partnership created an epidemiologic position and an infection control committee; in Stavropol, a deputy chief surgeon's position was introduced with the power to intervene to control infection in the hospital setting in that Partnership. In addition to the routine committee structures that were presented by many of the Partners, in Vladivostok another committee was established to control and prevent occupational diseases among the hospital staff and to insure efficient use of antibacterial preparations in the hospital. In the Partnership in Riga not only was an infection control team organized, but the intensive care unit was reorganized and redesigned according to principles that would help reduce nosocomial infection in this intensive care area. Also, a new bacteriologic lab was established and a clinic of pediatric infectious disease was organized.

In all of this reorganization, roles and responsibilities within many of the health care settings changed dramatically as the new positions and committee structures were introduced. In Murmansk an epidemiologist became responsible in each of the fifteen clinics along with an assistant epidemiologist to look for septic cases and nosocomial infections, investigate them, and present them to the infection control committee. In Vladivostok the committee was also trained in the cost-conscious management strategies that paralleled appropriate infection control within the hospital. This committee created a drug formulary and was responsible for enforcing efficient drug using policy within the hospital and other health care settings throughout Vladivostok. In Donetsk several positions were assigned the responsibility of infection control within several of the areas of the hospital with the over-sight provided by the committee which consisted of physicians, nurses,

and micro-biologists as well as pharmacologists who were responsible for over-sight in the entire health care environment.

Partners that had set up the infection control teams and/or committees to control nosocomial infection stressed the relationship of this team or committee with the micro-biology lab and the need for rapid response from the micro-biology lab to identify early those cross infections that would impact a large segment of the hospital population. In addition, again almost universally, the Partners gave this committee or infection control team the responsibility for on-going training in protocols and standards among all of the departments within the health care setting for both physicians and for nurses. This was especially true in Vladivostok where a group of nurses were selected and trained to insure on-going and efficient surveillance in managing patients who have risk factors for nosocomial infection. This group would provide data and information on the rate of hospital-acquired infections and also the techniques for controlling these infections. In Murmansk, of equal note, was the application of the CDC guidelines for staff members in the prevention of HIV transmission from patient to staff.

b. Financial Outputs

Several of the Partnerships identified the cost savings that resulted from infection control procedures. In the case of Vladivostok, the decline in the incidence of hospital-acquired infection resulted in shorter hospital stays, reduction in the use of medications, and therefore, improvement in the cost efficiency of the delivery of care. A similar phenomenon was identified in Stavropol as the introduction of an infection control program resulted in a decreased length of stay and also a reduction in the overall expenses for the cost of medications, especially microbial preparations and dressing materials. In Murmansk cost savings were identified in the centralized purchasing of disinfection and protection materials as well as Viral Hepatitis B vaccine. In Dushanbe and Riga the increase in the cost for single use and detergent material was identified as cost beneficial because of the resulting decrease in infections. A similar benefit was identified in Murmansk where the purchase of modern disinfectant materials and sterilization solutions along with disposable supplies were seen as being cost effective.

In Vladivostok an exceptional program was developed for the financial and clinical control of infections. In a joint pilot project funded by the insurance company and the hospital, a performance-based provider reimbursement pattern was established that took into consideration the severity ratio and quality of care provided by the individual hospital or provider. All cases of hospital-acquired infection were reviewed by an expert committee every month. If an infection was discovered that had occurred through negligence on the part of some clinical staff members, the

individuals responsible would be penalized or fined according to pre-existing practices established by the fund.

In Zadar a medication committee was developed to supervise the use of antibiotics and especially the application of reserve antibiotics such as Vancomycin, so that their use was controlled and expenses reduced. In Stavropol the Partnership developed some evidence based mechanisms for identifying the selection of disinfectants and antibacterial preparations as to their effectiveness for control of microbial infections. These Partners also developed a purchasing program to invest in more sophisticated hardware and electronic equipment and the use of the Internet and World Wide Web to identify more cost effective ways of attacking nosocomial infection.

c. Clinical Outputs

All of the Partners described a range of clinical practices that they had successfully introduced into their health care setting. For example, in Dushanbe a Training-Informational Center was opened which provides training on hand washing, vein puncture (insertion of a catheter into a vein), and infectious waste and economy service. Routinely, Partners identified improvements in methods of hand washing and operative field cleaning, development of aseptic rules for intervention within the patient care setting, proper preparation of equipment, proper sterilization techniques, patient isolation, implementation of appropriate laboratory procedures, utilization of blood and blood products in an appropriate fashion, and implementation of new diagnostic and treatment techniques for infection prevention.

In those Partnerships with a focus on surgery, special emphasis was placed on the prevention of infection in the surgical setting. In Albania improvements were documented in the examination of the patient prior to surgical intervention (e.g., patients are identified for potential of pre-existing sepsis) and the proper sterilization of equipment in the surgical setting; Dushanbe also placed heavier emphasis on regulations for the disinfectant, treatment, and sterilization of medical instruments for surgical use. In Murmansk, the introduction of closed drainage systems in urology and surgery was developed and the use of single use syringes and dressings were introduced. Similar interventions were introduced in Vladivostok as well as an emphasis on pre-surgery infection control and pre-surgery patient management. In Stavropol new methods of laparoscopic surgical sterilization were introduced in order to prevent infections through laparoscopy. This was also true in Odessa, where minimally invasive surgery techniques were used for treatment of hepatic kidney and pancreatic pathologies. The new methods of surgical intervention were accompanied by prophylactic infection control techniques to eliminate the type of infections that resulted from large wounds in traditional surgical interventions.

Most of the Partnerships also introduced procedures to govern patient flow, specifically those patients that presented themselves to the hospital with pre-existing septic conditions. In Donetsk, upon admission to the hospital each individual patient is directed to a specified unit. This selection is based on analysis of the existing infection or the potential risk of infection in that patient. In Riga, because of the introduction of techniques of infection control throughout the region, patients that were formerly admitted into the regional infectious disease hospital or the infectious disease section of the Clinical Children's Hospital are now handled in the regional hospitals when they are mild or moderate cases. Similarly, in Odessa patients are selected for certain departments based upon their pre-existing risk factors. In City Hospital No. 4 in Stavropol, greater attention is paid to patients upon admission with the creation of a surgery department to handle those patients that are purulent prior to admissions. Patients are identified as purulent or clean; and if purulent, are kept in isolation until discharge.

As outlined under the section on organizational change, all of the Partners to a greater or lesser degree had established a committee structure and central infection control responsibility for their hospital or health care setting. These committees had access to clinical protocols that had been introduced into the Partnership for the assessment of proper approaches to the control of infection in each of the departments for which they were responsible. As a result, the Partnerships almost universally had shifted their emphasis from external monitoring of the clinical setting by hygiene or sanitation departments to internal monitoring of this clinical setting by practitioners within the hospital or health care setting using standard epidemiologic techniques. To accomplish this task each of the Partnerships introduced more appropriate information gathering to determine the incidence of disease within the hospital. In some instances this was extremely sophisticated and required not only manual gathering of information but the introduction of computerized record keeping. In Murmansk, for example, all processing of complications of diseases resulting from hospital-born infection are computerized so as to present the committee with detailed information across the entire hospital. In Riga, which had struggled with an antibiotic resistant salmonella bacterial strain, there is now an automated system for patient registration of salmonella throughout the entire country that is located at the Clinical Children's Hospital. (In this Partnership a special project was developed to attack an antibiotic resistant salmonella. With intervention of both the Partners and AIHA, the Partnership in Riga planned and coordinated two research projects to determine the identification and control of this particular bacteria that had plagued the neonatal intensive care unit as well as the adult units in the hospitals in Riga.)

Most of the Partnerships created new records and new record keeping approaches to provide information to the epidemiologist or infection control nurse as well as the infection control committee. At the Erebuni Medical Center in Yerevan, record keeping became mandatory on all patients and information returned by the micro-biology lab; micro-organism strains that were found in the patient were immediately registered and a daily registration chart and surgical intervention review was introduced. This charting was reviewed on a monthly basis for any unusual micro-flora, and on a quarterly basis the committee would review all sanitary epidemiological data for the past quarter and identify unusual instances of infection within departments or among groups of patients. In Murmansk and Riga, as well as maintaining patient records, records were identified for all staff members with pre-existing conditions such as Hepatitis B or C or the presence of salmonella. In Donetsk special emphasis was placed upon staff contact with patients blood to reduce the potential incidence of HIV transfer and transfer of hepatitis. In Almaty a hospital-wide journal was created to register nosocomial infections and any changes that occurred in a specific clinical area of the hospital. Similar charting activities were identified in other Partnerships.

d. Community, Region or Country Level Outputs

In general the Partners identified their hospital or specific health care setting as a model which spread throughout the region as the effectiveness of infection control was demonstrated in their specific hospital. Since the documentation of infection was usually within the purview of the Ministry of Health or Sanitation Department for the nation or the region, most of the Partnerships had to reach some accommodation with these official agencies as they introduced new techniques within their health care setting to control infection. In many instances the Ministry of Health, using the Partners health care institution as a model, introduced the techniques that were developed by Partners into the entire region. In Yerevan (the Erebuni Medical Center), Almaty and Zadar, for example, the Partnerships worked with their Ministries of Health to develop a protocol to be disseminated on a national level. Similar protocols were developed in Murmansk that are being used by the Health Care Department, especially concerning infection control techniques needed to prevent the spread of HIV/AIDS. In Stavropol a commission on medical information technology was established to disseminate guidelines on cleansing, disinfecting, and sterilizing surgical equipment.

Through the Emergency Scientific Medical Center in Yerevan, issues related to infection control were introduced in the licensing process for medical personnel to assure that proper training for new physicians and paramedics included infection control techniques. This required national development of curricula and access to this curricula on information bases provided by AIHA.

In several other Partnerships associations were developed for infection control nurses and/or related personnel. This was true in the Kiev and Odessa, which actively circulated information through medical journals and nursing journals as well as various professional societies. In Dushanbe a city association of nurses was established in 1997 with a major objective to implement a program on infection control throughout the city. A similar initiative occurred in Donetsk, with improvements in community, regional, and national information exchanges through medical journals and nursing associations that already existed. In Murmansk the regional association of hospital epidemiologists was established in 1996, which subsequently became part of a regional association; a regional association of advanced and senior nurses was created, again with a focus on infection and infection control. In L viv an entire faculty for higher education in nursing was established in the L viv State Medical University; part of that initiative was the development of the infection control nurse protocols.

4. Model Outcomes

Similar to the output section, measurable outcomes will be documented under the headings of a) organizational (management), b) financial, c) clinical, and d) community, region or country level changes. As described in other sections of this report, Partnerships reported a number of outcomes anecdotally. Many Partnerships were able to put in place a system for collecting and analyzing pre- and post-program implementation data, although the data at this point is somewhat limited. In many instances outcomes were reported in terms of reduced infection rates, reduced lives lost, and money saved. The planting of this seed should bear fruit across each of the nations represented as these approaches are disseminated in national meetings of professionals attempting to reduce hospital-based infections.

a. Organizational (Management) Outcomes

Potential outcomes include: measurable increase in the quality of care (patient satisfaction); a measurable increase in staff efficiency; and a measurable decrease in patient length of stay related to inputs and outputs in this program area. All of the Partnerships anecdotally identified what they felt were concrete changes in the rate of infection throughout their hospital or health care setting as a result of the introduction of a committee structure and centralized responsibility for infection control. Of particular note in many hospitals was data that showed significant decline in patient days as a result of introduction of control procedures. For example, in Donetsk the hospital annual report described a decline of five days in patient length of stay in the unit of bone surgery which was a direct result of control of sepsis within this environment; in the prosthesis unit, a parallel decline in patient length of stay occurred. The Stavropol Partnership indicated that new treatment methods and the introduction of infection control reduced hospital stays significantly among a large

patient group. This was also true in the L viv Partnership, which identified a drop of 3.5 days as a result of the introduction of laparoscopic cholecystectomy and the resulting reduction of post-surgical infection. In Murmansk the average length of stay for surgical beds decreased from 15.1 days to 13.3 days; in other departments such as micro-surgery, from 19.7 days to 11.4; and in vascular and cardio-surgery from 18.3 days to 13.7. A similar decrease in length of stay was identified in Albania and other Partnerships.

b. Financial Outcomes

Many of the Partnerships described cost savings resulting from the introduction of infection prevention throughout their hospital and the resulting reduction in the use of costly antibiotics; however, only some were able at this point to quantify the amount of the savings. The Murmansk Partnership identified that the percentage of non-sterile supplies and instruments used in the operating rooms and dressing rooms decreased from 5.7 percent to .6 percent. In Vladivostok the savings resulting from the introduction of new sterile laparoscopic techniques resulted in a savings that totaled almost 170.4 million old rubles. A similar phenomenon was identified in L viv, where almost 5,000 US dollars were saved through the introduction of laparoscopy. Stavropol Regional Hospital and City Hospital documented that they now need two times less the amount of funds to cover the cost of micro-biological tests, and as a result they can buy more disinfectants and other material for the hospital. Pirogov First Municipal Hospital in Moscow documented that one day reduction of length of stay in the resuscitation department was equivalent to \$200 cost savings per patient, and the cost of pneumonia and meningitis treatment as well as wound infection management amounted between \$800-\$1,400 (US dollars) respectively.

The Partnership in Riga described potential new sources of revenue: they work in collaboration with their local zoo to create laboratory blood plates (at no cost); they may be able to sell these as well as well as do contract work through their microlab for other hospitals.

c. Clinical Outcomes

Partnerships were asked to report measurable increases in the quality of clinical care (evidence of reduced morbidity/mortality) related to inputs and outputs in this program area. The Murmansk Partnership was able to identify that post-operative complications, especially those from infections, decreased from 3.5 percent to 2.1 percent and that mortality due to pyroseptic infection had decreased by half. Of equal note in Vladivostok, the Children s Orthopedic and Trauma

Department identified a reduction in post-surgical complications from .7 percent in 1995 to 0 percent in 1997. Similar declines were noted in several other departments: vascular surgery post-surgical complications were reduced from 3.5 percent to .8 percent; emergency surgery from 2.9

percent to .96 percent; and similar declines in all of the various trauma units within the Partnership. In Lviv the Partnership was able to identify that in almost 100 operations using laparoscopic cholecystectomy there had been no records of an infection complication. In Odessa the hospital was able to identify a decline of 33 percent for infection complications in the area of vascular and thoracic surgery. This had resulted from extensive changes in the clinical care provided by the surgical team including both nurses and physicians. In this same hospital between 1994 and the first half of 1997, the hospital was able to show a two times decrease in the rate of infection complications that paralleled the decrease in patient length of stay. In Yerevan the Emergency Scientific Medical Center documented a reduction of post-operative complications due to infection of some 15 percent. Of equal importance was the identification of staphylococcal carriers among surgical personnel in this hospital and the decrease of this phenomenon by 30 percent.

d. Community, Region or Country Level Outcomes

Since the interventions of the Partnerships were limited to one or more health care settings, there was not an easily identifiable impact on either a region or national basis. Three Partnerships, however, did indicate that the Partnership activities had an impact broader than their own health care setting. In the city of Murmansk there was a decrease in the rate of infant morbidity as a result of infection from 29.6 per 1,000 infants born alive in 1994 to 24.0 per 1,000 in 1996; maternal morbidity decreased from 6 per 1,000 births to 3.7 in the same time frame. In Latvia, which had struggled dramatically with the impact of an antibiotic resistant salmonella, the incidence of salmonellosis decreased between 1996 to 1997 from 425 cases to 358 cases; deaths in the Children's Clinical Hospital went from 3 deaths in 1996 to 0 deaths in 1997.

V. CARE MANAGEMENT

Care management is a systemic approach to health care for large groups of people. It is a holistic approach that plans care over the life cycle of the disease; it focuses on populations at risk for poor health outcomes, incorporating patient education, preventive care programs (across the continuum of care), and disease management. The emphasis is on a team approach, coordinating care and facilitating communication between various health care personnel and the patient. As applied in the United States, clinical, financial and organizational elements of the health care issue are examined; outcomes are consistently measured and they provide the basis for management guidelines.

This chapter will describe the NIS/CEE Partner s self-assessment of those efforts, including programs which focussed on:

- A. Management of Chronic Disease;
- B. Neonatal Care;
- C. Oncology; and
- D. Home Care/Hospice Care.

The structure for describing findings in each of these program areas includes:

- 1. a description of the pre-existing conditions in the program area;
- 2. key inputs described in the self-assessments;
- 3. typical and exemplary outputs described in the self-assessments; and
- 4. model outcomes achieved by the Partnerships in the program area.

A. Management of Chronic Disease

In this section, the four Partnerships which described programs addressing the management of chronic diseases will be described. This included two Partnerships in the NIS: the Bolshaya Volga Hospital which houses the Diabetes School in Dubna, Russia and the L viv Oblast Clinical Hospital in L viv, Ukraine (focusing on rheumatism); and two Partnerships in the CEE: the Children s Hospital for Respiratory Diseases in Zagreb, Croatia (Croatia s only hospital to specialize in the treatment of children s lung diseases, including asthma), and the V c Municipal Hospital in V c, Hungary (focusing on diabetes).

1. Pre-Existing Conditions

Many hospitals were trying to contend with new budget cuts, combined with a history of budgetary deficit. For example, the V c Municipal Hospital in Hungary was facing a ten percent across the board cut in hospital funds from the state; they needed to develop an efficient use of information,

inventories and financial resources. Typically, this involved the need to shift the provision of care from inpatient settings to a less expensive outpatient system.

Combined with the shift in setting was the need to increase patient education (to improve the patients level of control of their disease); the need to prioritize the prevention of complications which can arise from poor management of chronic conditions. Physicians had responsibility for patient education but typically had limited time in which to complete this task. Often there was poor coordination between outpatient/community based care providers and hospital staff. There was a need to develop a comprehensive continuum of care for the diagnosis and treatment of chronic diseases, particularly those which impacted a large number of the population and were associated with high morbidity and mortality rates.

In L viv, there was an Oblast-wide effort to identify and develop protocols for the diagnosis and treatment of rheumatic fever and its major sequelae, rheumatic heart disease; the collection of data concerning the location and incidences of rheumatic fever outbreaks was analyzed and became the focus of plans for their program. The Partnership in Zagreb intended to implement a comprehensive asthma program; the Partnerships in Dubna and V c had each identified diabetes as one of the diseases affecting a large number of their population.

2. Key Inputs

Inputs will be described in three areas: a) activities during exchange visits between the US and NIS/CEE partners; b) equipment, supplies and educational materials provided by the US partners; and c) inputs provided by AIHA.

a. Exchange Visits

An average of 6 visits to the NIS/CEE sites directed at this program area were made during the Partnership by the US (a range from 1 to 11 visits); and an average of 5 visits to the United States were made by the NIS/CEE Partnerships (a range from 1 to 13 visits). Typically staff involved in the exchange visits in this program area included physicians and nurses; the Partnership in L viv reported that exchanges included staff in the departments of infectious diseases, pathology, rheumatology, internal medicine, cardiology and pediatrics. These exchange visits provided the opportunity for training and/or retraining in the US and NIS/CEE. Training topics covered: diabetes (e.g., dietary treatment, insulin treatment, oral hypoglycemic agents); asthma (e.g., pathophysiology of asthma, treatment of asthma); and rheumatism (e.g., prevention of rheumatism).

As the respondent from Dubna described, visits to the United States also provided the opportunity to watch how establishments and programs are run; getting a complete impression of how the system functions ; Dubna site visits included a tour of the Mayo Medical Clinic in Rochester, Minnesota. The Partnership from Zagreb was exposed to types of asthma treatment in the US, including asthma camps. Visits to the NIS/CEE sites allowed for an objective evaluation of the currently existing health care system ; including the opportunity to adjust the US system to meet conditions within the NIS/CEE.

b. Equipment, Supplies and Educational Materials

Another important type of input provided by US Partners was equipment, supplies and educational materials. New equipment was provided to complement improvements in clinical practice, including: peak flow meters (for asthma treatment); a manual ophthalmoscope, glucometers and a spectral photometer with a reagent set (for diabetes programs); supplies and equipment for the hospital's cardiosurgery unit (for the rheumatism program). Equipment and supplies were provided to support new educational programs (e.g., overhead and slide projectors, poster sets); some US Partners provided equipment which could be used to support clinical and/or administrative tasks (e.g., computers, fax machines, copiers).

Relevant medical textbooks and journals were also supplied by US Partners; the Partnership in Zagreb was provided with questionnaires on asthma categorization for ambulatory and hospital treatment. Educational materials for patients were provided, including: for diabetes (e.g., handouts on gestational diabetes, teaching sheets on diet and plastic foods, a survey to estimate the knowledge level of the patient); for asthma (e.g., a brochure titled *What is Asthma?* , a children's book titled *You Have Asthma, Too*); and for rheumatism (e.g., a booklet for children on rheumatism).

c. AIHA Inputs

The system support provided by AIHA through developing Learning Resource Centers (LRC) proved invaluable to these Partnerships. The LRC offered a fast and cost-effective way of communicating with US Partners and other institutions, including the opportunity to seek advice from other Partnerships and specialists. The AIHA publication *Common Health* was described as playing a great role in supplying the partners and Ukrainian specialists with important information in the field of medicine. AIHA also assisted with the translation and/or publication of printed materials in this program area.

AIHA provided training opportunities (including a joint seminar with the World Health Organization on quality issues), and supported teleconferences and workshops developed by Partners (workshops developed by NIS/CEE Partners are described under community, region or country level outputs). In L viv, AIHA provided the support for a professional visit and training of a microbiologist (specializing in streptococcus A) in St. Petersburg (Russia). The general support provided by AIHA was greatly appreciated, as the respondent from L viv described: AIHA very skillfully coordinates efforts of the partners showing them main directions.

3. Typical and Exemplary Outputs

Outputs for programs focusing on the management of chronic diseases were described in these four areas: a) organizational (management), b) financial, c) clinical, and d) community, region or country level changes. Typical and exemplary outputs in these four areas will be described in the sections below.

a. Organizational (Management) Outputs

The most significant output in the organizational/management area involved changes in systems of care to improve their efficiency and effectiveness. In Dubna, the municipal Diabetes Mellitus School was established; this School is a central training center and a model for replication. In V c, diabetic patients are now treated in one outpatient clinic and in one department of the V c Municipal Hospital (before they were treated in many clinics and departments). Zagreb decreased the duration of inpatient treatment, shifting to seeing more patients in outpatient clinics. In clinics, they reorganized their work schedules to decrease patient waiting time (patients can now make appointments). In L viv, The Center for Rheumatology has been organized at the L viv Oblast Clinical Hospital. This Center brings together chief child and adult rheumatologists, a member of L viv Medical University, and representatives of the Regional Departments of Statistics and Information.

Complementing these system level changes were modifications in job descriptions, the creation of new positions, and a shift to a team approach to care. Typically this involved greater responsibility for nurses, particularly in the area of patient education. In V c, an interdisciplinary diabetes team was established and trained which included nurse educators (the patient educator position for inpatient education is a new position); later, a few nurses of all departments were trained. An asthma team was established in Zagreb which includes physicians, nurses and physiotherapists. Dubna also developed a team approach to patient care and enhanced the nurse s role (the manager

of the School is a nurse); the team now includes specialists in podiatry, ophthalmology and neurology.

b. Financial Outputs

Partnerships described new sources of revenue as a result of Partnership activities. In Dubna, all types of services rendered by the Diabetes Mellitus School (including the educational ones) are funded from the city budget. This Partnership worked to engender the active support and involvement of City Administration and the Ministry of Health. As a result of the School's performance over two years, a target grant was won which is used for purchasing insulin and diagnostic equipment as well as training specialists who work in the Moscow Oblast region. The Partnership in V c was able to win the sponsorship of nurse education by the Eli Lilly company and Novo Nordisk company. The Partnership in L viv indicated that they were in the process of setting up a Foundation to support the prevention and treatment of cardiac pathologies.

Partnerships also described changes in purchasing programs which resulted from activities in this program area. As noted above, in Dubna equipment and pharmaceuticals (insulin) are purchased through a target grant; money from the municipal budget allocated for purchasing pharmaceuticals is saved for purchasing visual strips. The L viv Partnership also noted changes in purchasing programs, but did not describe these in detail. Significantly, this Partnership did indicate that they had learned how to calculate the economic effectiveness of rheumatism-prevention activities from their US Partner.

c. Clinical Outputs

Significant changes were made in clinical practice, as systems shifted to a greater emphasis on providing patient education and care through a team approach. In V c, when a patient is in the hospital the diabetic patient educator is informed about it and initiates patient education; after discharge the patient is referred to the diabetes outpatient clinic for follow-up (a follow-up protocol has been developed). Patient education protocols were developed for: diet on the sick days, symptoms of hyperglycemia and hypoglycemia, and diabetic complications; this Partnership also developed a test to evaluate the education's effectiveness. Dubna introduced a new practice of primary and follow-up examinations which facilitates monitoring the course of the disease. Implementing programs that are meant to modify patient lifestyle completely changed provider - patient interaction. A physician compiles an individual program for each patient, who is included in the team and is taught how to provide self-aid (support groups are also available). The Zagreb Partnership allows parents to stay with children at the hospital, including parents in the treatment

and care of their children. The Partnership in L viv improved understanding of anti-rheumatism preventive care by patients, and improved contacts between patients and the medical staff. They also developed close professional contacts with rheumatologists and cardiologists and cardiosurgeons.

As previously described, this shift was supported through a change in the role of nurses. Their work with physicians has changed; their importance in providing patient education is acknowledged. In V c, nurses and nurse educators are trained in the Municipal Hospital; nurses in family physician offices have also been trained to provide specialized education to individuals and groups. In Dubna, in Hospital No. 9, a nurse examines diabetics independently. They described that an atmosphere of trust had been created within work teams, improving the self-esteem of nurses.

New technologies and treatment methods have been introduced into clinical practice as a result of these programs. Zagreb noted a thirty percent increase in the use of the peak flow meter (for asthma); L viv reported more active use of ultrasound diagnostics in detection of cardiac pathologies (related to rheumatism). In the management of diabetes, Dubna now uses: glycosylated hemoglobin testing; cholesterol profile testing; and new approaches to insulin treatment. Zagreb also described a new protocol for asthma categorization; they now set apart patients with asthma from those with pulmonary tuberculosis.

Reports and oversight committees have been developed to monitor the implementation of changes in the clinical area. In L viv, there is a thorough analysis of all rheumatism-related deaths ; they organized a Rheumatology Program Steering Committee and developed a database which contains data on all patients treated since 1993. This database assists in correct diagnostics and proper decision-making in therapy planning, changes in clinical practices, management, etc. Zagreb has implemented a report on the number of benign, medium-serious and serious cases of asthma which are treated in the hospital. Dubna utilizes a register adapted from the World Health Organization, which permits systematization of patient tracking, needs for insulin preparations and tablets.

d. Community, Region or Country Level Outputs

At the community, region and country level, changes have been made in policies concerning clinical care and in the credentialing/certification of personnel. The L viv Partnership produced recommendations on how to prevent rheumatism at a national level, and recommendations for primary and secondary rheumatism preventive care; the Regional Health Administration has issued a special order on how to facilitate implementation of the Program at a regional level. The

Partnership in Hungary was asked by the Ministry of Welfare to develop national guidelines for patient education, and created a model for patient education, data collection and evaluation. The Diabetes Mellitus School in Dubna has been introduced in five cities of the Moscow Oblast.

There have also been improvements in community, regional or national information exchange as a result of Partnership activities in this program area. Two Partnerships sponsored national conferences: the Zagreb Partnership hosted a two day conference Together Against Asthma and Tuberculosis - Partners in Diagnosis and Treatment to disseminate information to primary care physicians; L viv developed two Rheumatic Fever Conferences attended by physicians from across the Ukraine (encouraging the use of prophylactic antibiotics). The L viv Partnership has worked effectively with the mass media, including three publications in local newspapers, two radio presentations with a focus on rheumatism, and a regular column in *The World Medicine* magazine.

4. Model Outcomes

Outcomes for programs focusing on the management of chronic diseases will be presented below in three areas: a) organizational (management), b) financial, and c) clinical. Partnerships were not able to report quantifiable outcomes at the community, region or country level at this early stage in program implementation and dissemination.

a. Organizational (Management) Outcomes

Potential outcomes include: measurable increase in the quality of care (patient satisfaction); a measurable increase in staff efficiency; and a measurable decrease in patient length of stay (LOS) related to inputs and outputs in this program area. Several Partnerships reported a measurable decrease in patient LOS. The rate of chronic rheumatological cardiac pathologies in L viv (per 1000 capita of corresponding group) decreased between 1993 and 1997 from: 126 to 75 in children, and 80 to 57 in adolescents (ages 15 - 17). They attributed this change to early diagnostics of rheumatism in children and proper diagnostics and rational treatment of active rheumatism in adolescents. The Partnership in V c indicated that hospital LOS decreased for patients with diabetes as the main diagnosis from 11.65 days in 1995 to 6.52 days in 1997; for patients with diabetes as a concomitant disease from 15.54 days in 1995 to 10.61 days in 1997. Dubna reported that: hospital length of stay for children has decreased (compared to 1993) from 28 patient/days to 0 patient/days.

Dubna indicated that their survey results showed that 100 percent of their patients were satisfied with the training course provided by the Diabetes Mellitus School. The Partnership in V c also cited high patient satisfaction (the actual results were not reported).

b. Financial Outcomes

Potential outcomes included: evidence of cost savings; evidence of new sources of revenue; and evidence of reduced deficit related to inputs and outputs in this program area. The Partnership in Lviv indicated that there were cost savings due to changes in pre-operative anti-rheumatism care, which includes a patient's stay in corresponding hospital units instead of the more expensive Unit of Cardiac Surgery (the average length of stay in the Unit of Cardiac Surgery was 25 days in 1993 and 12.6 days in 1997; patient stay prior to the operation was 17.2 days in 1993 and 5.6 days in 1997). They stated that the calculation of the actual savings accrued as a result of this is difficult to determine because of the existing lack of financial stability in Ukraine. Dubna cited a figure in the city budget planned for purchasing insulin in 1997 of 600 million old (non-denominated) rubles, which was never been spent due to insulin procurement through their grant. They also reported a significant reduction in expenditures on ambulance calls for patients with acute diabetes mellitus complications (calls decreased from 16 in 1993 to 3 in 1997) as well as savings from less inpatient treatment of diabetics (these cost savings were not quantified). Dubna was able to report a new source of revenue: during the 4-year period (1994-1997) the city budget directed 350 million rubles for the municipal Diabetes Mellitus School's maintenance.

c. Clinical Outcomes

Partnerships were asked to report measurable increases in the quality of clinical care (evidence of reduced morbidity/mortality) related to inputs and outputs in this program area. Several Partnerships reported positive outcomes: Lviv documented that adult mortality (related to rheumatism) decreased from 219 cases in 1993 to 160 cases in 1997; Zagreb cited a 50 percent decrease in the number of patients treated in the hospital, as well as a decrease in serious forms of asthma. In Dubna: the number of hospital admissions for children decreased (compared to 1993) from 36 cases to 0 cases; the number of hospital admissions for adults decreased (compared to 1993) from 42 cases to 21 cases; and there was a reduction of the glycosylated hemoglobin level (on an average) from 13.8 percent (in 1993) to 7-8 percent (in 1997). In Vc, patients' knowledge increased as a result of education - self control of Type I diabetics increased from 40% to 80% since the start of the program. This Partnership also reported that as a result of improvements in the effectiveness of treatment, the number of patients admitted to the hospital because of organ complications of diabetes decreased from 12 in 1995 to 8 in 1997 (reporting the number of hospitalizations in a family physician's praxis with 2000 people including 100 diabetics).

B. Neonatal Resuscitation and Neonatal Intensive Care

In this section, the eight Partnerships which focussed on neonatal resuscitation and/or neonatal intensive care will be described. Four of these Partnerships were involved in the development of new and expanded neonatal intensive care units, including one Partnership in the CEE: Faculty Hospital and Polyclinic in Kosice, Slovakia; and three in the NIS: the Institute of Obstetrics and Pediatrics in Bishkek, Kyrgyzstan; L viv Oblast Clinical Hospital in L viv, Ukraine; and Second State Medical Institute, in Tashkent, Uzbekistan. The remaining four Partnerships placed an emphasis almost exclusively on the development of neonatal resuscitation and outreach training to other hospitals. These Partnerships included one in the CEE: University Maternity Hospital in Tirana, Albania; and three in the NIS: City Medical Center in Dushanbe, Tajikistan; L viv Perinatal Center in L viv, Ukraine; and Odessa Oblast Hospital in Odessa, Ukraine.

1. Pre-existing Conditions

With the break-up of the former Soviet Union as well as the revolutions in Eastern Europe resulting in more democratic and decentralized governments, there was a corresponding break-up of the centralized hierarchical health care system. This system, with all its faults, had at least provided a coherent delivery system across urban and rural areas. The health care systems in these countries were financially starved, which created a gradual deterioration in both the technology and facilities that would guarantee the safe and effective delivery of health care. Infant populations were especially vulnerable to this decline in health care delivery; infant mortality rates were increasing across all of the former Republics of the Soviet Union as well as the European states that were under Communist control. In many areas the delivery of perinatal care was in jeopardy; there was an increase in the number of infants being delivered with little or no pre-existing care. Further, there was a decline in the transfer of infants from district hospitals to regional hospitals, and the breakdown of enforced regionalization of care in many areas of the countries.

In the more rural areas of these republics there had never been a concerted effort to provide adequate resuscitation capability for infants. The determination had been made that such resuscitation was futile since in most instances timely transport of infants to sophisticated perinatal centers was impossible due to poor infrastructure of roads, airlines, or other means of transportation.

Many of the extraordinary breakthroughs that had been developed in the 1970s and 1980s in the United States and Western Europe were not well known to pediatricians and neonatologists in the NIS/CEE due to the lack of communication through scientific literature. In addition to these problems, there was the added difficulty of improper or poor reporting in the past of the death of

infants under certain gram weights (e.g., 1,500 grams); infant mortality rates were frequently distorted and were published at a lower rate than actually existed.

2. Key Inputs

Inputs will be described in three areas: a) activities during exchange visits between the US and NIS/CEE Partners; b) equipment, supplies and educational materials provided by the US Partners; and c) inputs provided by AIHA.

a. Exchange Visits

It was essential for the professionals in the NIS/CEE to come to the US and witness in the settings of the Partner hospitals the innovations and delivery of care for low birthweight neonates to understand what these new approaches to neonatal medicine required. An average of 5 visits to the NIS/CEE sites directed at this program area were made during the Partnership by the US (a range from 2 to 14 in the Partnerships that reported this information); and an average of 7 visits to the United States were made by the NIS/CEE Partnerships (a range from 1 to 16 in the Partnerships that reported this information). Many of the Partnerships had fairly extensive exchanges; the greatest number of participants (82) came from Tashkent to the US. In addition, this Partnership sent 7 physicians and nurses to a three-month knowledge refreshment course in Chicago to study new approaches to newborn care technologies for resuscitation and newborn intensive therapy.

These exchanges resulted in upgrading the qualifications of professionals in the NIS/CEE. Training topics included: neonatal resuscitation; neonatal resuscitation program development; current problems in neonatology; newborn nursing; syndrome of respiratory disturbances; indirect heart massage; the issues of using surfactant in cases of respiratory disturbances; regionalization of care in perinatology. Many of the NIS/CEE Partnerships developed seminars and workshops to disseminate this information to physicians (either pediatricians or neonatologists) as well as to pediatric and neonatal nurses within their own as well as other institutions in their countries. This included sponsoring a series of train the trainers courses in neonatal resuscitation to facilitate replication of these practices. The Tashkent Partnership had a significant influence on its country through a series of seminars directed toward physicians and nurses; seven workshops were attended by over 13,000 participants in four years. The workshops ranged from basic issues in neonatology and the care of high risk infants, to the application of equipment in neonatology and the identification of respiratory distress syndrome. Faculty Hospital in Kosice involved approximately 600 participants in training sessions as they proposed a much more stringent regionalization program for Slovakia. In addition, they sponsored twelve video conferences related to high risk infant care.

b. Equipment, Supplies, and Educational Materials

The donation of major equipment and supplies from the US Partners to their NIS/CEE counterparts was considerable. Many Partnerships received training manuals and mannequins for providing training on the resuscitation and stabilization of infants. The L viv Perinatal Center received neonatal monitors, infusion pumps, various ventilation equipment, and extensive supplies; the Second State Medical Institute in Tashkent was provided with a defibrillator, cardio-pulmonary monitors and other ventilation equipment. The most outstanding contribution was made by the Ford Hospital System to its Partner in L viv. This system provided extensive equipment for the neonatal intensive care unit, including ventilators, ultrasound equipment, cardio-pulmonary monitors, transcutaneous monitors, and infusion pumps. It also provided an ambulance and a fully equipped transport vehicle for infants to provide for the movement and referral of high risk infants from regional hospitals to the referral center in L viv.

Educational material contributed by the US to many of the Partnerships included all of the basic American Academy of Pediatrics and Heart Association standards and protocols for the resuscitation and stabilization of infants; these manuals were used to provide for the certification of trainers. In addition to these basic texts, many of the Partnerships also received a variety of textbooks and monographs on neonatology and on the care of high risk neonates, as well as the early identification of fetal distress in the prenatal period. From the Henry Ford Health System there was an extensive transfer of slides, textbooks, and guidelines to a large number of physicians and nurses in L viv (and then throughout the Ukraine) concerning neonatal resuscitation and stabilization of infants. An instructors manual and a textbook on neonatal resuscitation were translated into Ukrainian and widely disseminated.

c. AIHA Inputs

During each of the AIHA annual conferences for the NIS (in St. Petersburg, Des Moines, and Atlanta), seminars were dedicated to the care of high risk newborns. This was also the case in the annual meetings that were held for the CEE in Budapest and Bucharest. AIHA also sponsored a regional conference in 1996 in Tashkent, Uzbekistan entitled, Actual Issues in Neonatology, with the participation of neonatologists from the US and NIS.

AIHA supplied each of the Partnerships with dedicated equipment for communication, including computers and appropriate software to provide access to e-mail. This equipment was incorporated into the Learning Resource Center (provided by AIHA) of the respective Partnerships. In addition

to this, AIHA provided the L viv Oblast Clinical Hospital with 28 sets of medical equipment and supplies for neonatal resuscitation to be distributed throughout all of the birthing houses in the L viv region. Similar material was provided to the Odessa Regional Hospital; as well as a series of CDs with information libraries that were made available to most of the Partnerships to assist them in their training programs.

3. Typical and Exemplary Outputs

As indicated in the description of this program initiative, two fundamental outputs were characteristic of the Partnerships involved in this program area. The first is the development of resuscitation programs directed toward resuscitation and stabilizing infants in the obstetrical units; the second is related to the improvement of the regional transport and referral system, and the improvement of the technology and skill base of the professionals who are in the neonatal intensive care units of the referral centers. These outputs will be characterized in four different areas: a) organizational (management), b) financial, c) clinical, and d) community, region, or national level changes.

a. Organizational (Management) Outputs

In the Partnerships in Odessa and Tashkent, the major organizational change was the establishment of a training center for neonatal care and neonatal care specialists; Tashkent also instituted a training center for newborn resuscitation. The L viv Oblast Clinical Hospital was already established as a center for neonatal care; this Partnership created for the first time a neonatal services transport with equipment and material fully provided by their hospital Partner. The Partnership in Bishkek established a new maternity home with 100 beds, including six beds for neonatal resuscitation; a similar unit was established in the L viv Perinatal Center. A resuscitation ward with three beds was opened in Dushanbe. In the Kosice Partnership the neonatal intensive care unit increased its bed complement from 10 to 14. The significant organizational output accomplished by this Partnership was the development of an affiliation relationship with some 30 hospitals throughout the region and their work to reorganize regional care both within and outside the hospital.

As a result of these organizational changes, there were corresponding changes in certain responsibilities assigned to the physicians and nurses working within these environments. In the L viv Perinatal Center, as in many Partnerships, the delegation of responsibilities was restructured and new protocols were introduced. The L viv Oblast Clinical Hospital set up a neonatal care committee and created several new positions, including a senior nurse to provide staffing of the neonatal unit and quality control. One of the innovations inaugurated by this Partnership was an

advisory committee of parents who looked at, among other things, criteria for the hospitalization and care of infants. In Kosice the position of a chief nurse for all shifts was created; this person was responsible for the ongoing care of the patients and the referral of problem situations to the physician on call. A similar position was established in Tashkent in the newly opened newborn resuscitation department; a special post was organized for the nurses who were serving on a 24 hour basis to control the quality of care and reduce mortality in the high risk newborn units.

b. Financial Outputs

In the financial area, many of the Partnerships introduced new financial monitoring systems or changes in budget control. For example, in the Kosice Partnership the physician and chief established a regular monthly analysis of the economic situation and monitored both the income and expenses in order to improve the financial activity of the neonatal intensive care unit. In this same Partnership there was a dramatic change in the use of antibiotics that resulted in a decrease of expensive antibiotic therapy. In Tirana, a purchasing commission was created for purchasing supplies and equipment for the unit and to improve, through reduction in cost, the financial status of the unit.

Two Partnerships had improved their financial status through securing grant money. In Bishkek a grant of \$2,000,000 (US dollars) was obtained for the maternity home to provide for additional equipment and material. The L viv Oblast Clinical Hospital was able to obtain \$15,000 (US dollars) in support for improving the equipment and supplies in their neonatal intensive care unit.

c. Clinical Outputs

Four of the Partnerships (the two Partnerships in L viv, and the Partnerships in Tashkent and Slovakia) described significant changes in the delivery of high risk care in the neonatal intensive care unit. This included new techniques in ventilation and in monitoring cardio-respiratory and pulmonary monitoring capability, the use of central catheters, parenteral nutrition of newborns, blood gas analysis, and infection control. The Faculty Hospital and Polyclinic in Kosice and the L viv Oblast Clinical Hospital placed great emphasis on their infection control program and the development of an infection control monitoring system that would allow for immediate and significant intervention when infection was identified in an infant. As a result of the work in Tashkent, the staff of the clinic had mastered technologies in intubation, catheterization, and the skills needed for manipulating the resuscitation apparatus; many of these skills were transmitted to staff nurses in the neonatal unit.

Changes in the utilization of resources were also reported as an output in the clinical area. In the Kosice Partnership there was an improvement in the staff-patient ratio in the neonatal intensive care unit which helped to improve the continuity of ventilation on a 24 hour basis. The Second State Medical Institute in Tashkent developed a commission on treatment effectiveness with the most experienced clinical specialists in the area; it is their job to analyze the activities of the physicians delivering care and the resources used in the unit in order to identify the appropriateness of care and the proper utilization of resources for the delivery of that care.

In many Partnerships, including Tirana, emphasis was placed upon resuscitation skills for nurses and physicians in the delivery room and the treatment of sick newborns according to protocols established in the US. Among these were protocols for infection control, for resuscitation in the delivery room, and monitoring of labor and delivery. In several of the Partnerships there were indications that patient flow changed as a result of input from the US Partners; the primary change occurred in the admission criteria for admission into the neonatal intensive care unit. Admission protocols were established both for those patients within the hospital and those patients within the region. In addition, the Kosice Partnership developed patient protocols for earlier discharge of patients out of the neonatal intensive care unit.

Two of the Partnerships have created a fairly intensive information program that is patient specific. The Lviv Oblast Clinical Hospital created a database on all patients of the center from 1995. This system provides analysis and assessment of the center's effectiveness as well as allowing decisions to be made in the field of clinical practice and management; a series of reports are provided for both physicians and nurses that document the activity of the professionals and the impact that this had on the patient throughout the entire episode of care. A similar system was implemented in the Kosice Partnership, in which a daily record is prepared for physicians and both physicians and nurses record vital functions, monitoring, and patient assessments which later in a relational database allow for analysis of statistical information derived from specific patient care. In Tashkent, new forms were introduced to monitor those patients who were resuscitated over the course of their hospital stay.

d. Community, Region or Country Level Outputs

With the exception of Tajikistan and Albania, the Partnerships in the other countries indicated that there were significant changes on the national level as a result of their work in this program area. One of the changes involved new regional or national policies related to neonatal care. In Tashkent, recommendations were made to all resuscitation departments of maternity homes in

Uzbekistan and the practices were implemented jointly with Partners from the University of Illinois and specialists from the Ministry of Health. In addition, new licensing for certification of staff performing resuscitation was adopted by the Republic. This certification process also took place in the Ukraine, in which new regional and national policies were instituted concerning credentialing of personnel who were capable of resuscitating infants using the standard interventions that were practiced by the Partnerships. In Bishkek the national Ministry of Health adopted for all of Kyrgyzstan Legislation #19, which concerned the care that would be provided in maternity facilities. With the support of the Kosice Partnership, the existing association of neonatologists developed a proposal for Slovakia that would regionalize neonatal care and establish a network of Level II and III centers serving all of the regions of that nation.

The other significant output in this area involved improvements in information exchange at the community, region or national level. For example, the two Partnerships in Lviv were instrumental in bringing about the organization of the Ukrainian Association of Neonatologists. They also helped to organize a national conference which focussed on primary and neonatal care and recommended the implementation of the practices in these hospitals to specialized medical institutions throughout the Ukraine. The Partnership in Bishkek was responsible for the formation of the Association of Physician Neonatologists and the Association of Obstetricians Gynecologists in Kyrgyzstan.

4. Model Outcomes

The impact of activities in this program area in some instances was quite profound, resulting in a decline in infant mortality that mirrored the decline in Western Europe and the United States over those same two decades. This decline was observed in a much shorter time frame because the professionals in these countries were able to implement all of the organizational and clinical interventions that had developed over time in Western Europe and the United States. Outcomes are described in four areas: a) organizational (management) b) financial, c) clinical, and d) community, region or country level changes.

a. Organizational (Management) Outcomes

Potential outcomes in this area include a measurable increase in staff efficiency and a measurable decrease in patient length of stay. In Kosice, the Faculty Hospital admitted 110 newborns to its neonatal intensive care unit in 1995; this increased to 193 in 1997. There was also a parallel increase in the number of maternal transports that arrived in the Faculty Hospital as more high risk mothers were identified in utero and, therefore, avoided the transport of the neonate in an extreme condition. The L'viv Regional Clinical Hospital was able to document a decrease in the average length of hospital stay of neonates in the neonatal intensive care unit from 32 days in 1995 to 25.7 days in 1997.

b. Financial Outcomes

A potential financial outcome is evidence of cost savings; several Partnerships reported that this had occurred in their institutions. In the Kosice Partnership, the Department of Neonatology documented a significant reduction in the total cost for pharmaceuticals, supplies, catheters, and other materials and equipment as a result of the impact of the Partnership. Much of this was the result of a decrease in the cost of antibiotic therapy (which had been prophylactic and had misused higher end antibiotics to combat sepsis or suspected sepsis in the unit). Over the three year period the cost of antibiotics in the unit declined by a little over one-third, from \$117 to \$24 per newborn in the unit. The Dushanbe Partnership identified that their US Partner's contributions of supplies, equipment, and material led to a reduction in the daily cost per patient day in the state medical center; US contributions were significant for many Partnerships.

c. Clinical Outcomes

Partnerships were asked to describe any evidence of reduced morbidity and mortality as a result of Partnership activities in this program area. Dramatic results were reported in the L'viv Regional Hospital: increased effectiveness of artificial ventilation resulted in a significant increase in the survival of infants after artificial ventilation (from 33.3 percent in 1995 to 41.4 percent in 1997). In Bishkek a similar clinical outcome was identified; the early neonatal mortality rate from 1992 to 1996 went from 8.1 per 1,000 live births to 6.2 per 1,000 live births. The Faculty Hospital in Kosice also documented a significant decline in birth weight specific mortality. In the neonatal intensive care unit in the Faculty Hospital, the neonatal mortality rate in 1995 (excluding congenital anomalies) was 24.2 percent. In 1997, as a result of the Partnership, this declined dramatically to 7.2 percent. The L'viv Perinatal Center documented a similar decline in early neonatal mortality from 10.65 percent per 1,000 live births in 1996 to 6.9 percent per 1,000 live births in 1997.

d. Community, Region or Country Level Outcomes

As a result of the L viv regional programs there was a significant decrease in mortality rates across the region: the infant mortality rate went from 14.3 percent per 1,000 live births in 1995 to 13.1 percent per 1,000 live births in 1997. This is true despite the country s general difficult economic situation; it can be considered, therefore, as an index reflecting the results and outcomes of the Partnership programs. In Eastern Slovakia between 1995 and 1997 the neonatal mortality rate went from 9.2 per 1,000 live births to 5.8 per 1,000 live births. This impacted the infant mortality rate for the region; in that same time span the regional infant mortality rate went from 14 per 1,000 live births to 10.9 per 1,000 live births.

The improvement in Slovakia described above is a result not only of the decline in deaths in the Faculty Hospital, but also is a result of the influence this Partnership had in the regional structure for Eastern Slovakia and the training programs they disseminated across all levels of care. There was an increase in the number of infants of very low birth weight and extremely low birth weight born at Level III departments throughout the region and a decrease that was significant in those infants being born at Level I departments. This demonstrates the influence that regionalization can have in a relatively short period of time in reducing poor infant outcomes in an area that was above the national average for both neonatal and infant mortality.

C. Oncology

In this section, the three Partnerships which described programs focusing on oncology/cancer registries will be described. This included two Partnerships in the CEE: the Zadar General Hospital in Zadar, Croatia, and the V c Municipal Hospital in V c, Hungary; and one Partnership in the NIS, which included six institutions in the area of Semipalatinsk, Kazakstan: The Inter-Oblast Oncology Dispensary, the Oblast Clinical Hospital, the Oblast Children s Hospital, Emergency First Aid Hospital, the Diagnostic Center (in Kurchatov), and the Semipalatinsk Gynecology Center.

1. Pre-Existing Conditions

As described in the section management of chronic disease , health care systems in the NIS/CEE were faced with budgetary deficits and needed to develop a more efficient use of resources. There was a particular need to focus on conditions with high morbidity/mortality which effected a great number of the population. As previously detailed, the Partnership in V c was hoping to reduce hospital length of stay through improving home care and family medicine systems, providing more services in an outpatient setting (providing the same services in an outpatient setting was a loss for the hospital until recently because of the financing structure). Beginning to address psychological aspects of the disease was also a goal of this Partnership.

Each of the three Partnerships expressed a need to create a patient tracking system and cancer registries which could provide critical insight into morbidity and mortality related to cancer. A cancer database could also be used to monitor treatment outcome and cost, which was of critical importance in these countries. Special issues were related to the choice of this program area in Semipalatinsk. Until 1989, the Semipalatinsk region was home to the Soviet Union's Nuclear Test Site. Increased incidences of cancer as well as birth defects have been attributed to the nuclear testing program. The plan to create a Cancer Registry and initiatives in cancer screening were in response to the critical needs of the people of this region.

There was also a need in these countries to improve prevention and early detection of cancer; limited information and technological resources had contributed to a lack of public awareness, early detection, and appropriate interventions. For example, before the Partnership was implemented in Zadar, systematic screening examinations for cancer were rare; general practitioners did not conduct these, medical care didn't cover the expense. As the respondent from Zadar described, the country of Croatia was adopting a new approach to health, encouraging the idea that a healthy person should take care of him/herself. So, even when there are no health problems, he/she should undergo certain tests once a year (or less often depending on age). In Hungary as well, cancer is generally believed as an incurable diagnosis among patients while prevention is weak in some aspects in this country. Public awareness programs (even professional awareness programs) were typically nonexistent.

2. Key Inputs

Inputs will be described in three areas: a) activities during exchange visits between the US and NIS/CEE partners; b) equipment, supplies and educational materials provided by the US partners; and c) inputs provided by AIHA.

a. Exchange Visits

An average of 4 visits to the NIS/CEE sites directed at this program area were made during the Partnership by the US (a range from 1 to 9 visits); an average of 3 visits to the United States were made by NIS/CEE Partnership representatives (a range from 1 to 5 visits). Visits to the US exposed Partners in the NIS/CEE to US systems for providing care. Partners from Vc visited: a hospice service (including visits at the home of cancer patients); a breast cancer screening program; radiology, oncology and surgery departments and operation theatres. Partners from Semipalatinsk visited a US Cancer Registry and received special training in data input and cancer abstraction. As

they described: a detailed familiarization with health care activities of the Texas Medical Center has allowed us to conduct more effective reforming of health care in the region .

Extensive training of physicians, nurses, radiologists, technicians and others also took place as a result of exchange visits. Training topics included: cancer prevention activities (e.g., the role of primary care and health officer in the cancer prevention); cancer screening techniques; pain control for malignant patients; immunotherapy of malignant illnesses; psychological aspects of taking care of cancer patients; and the operative and postoperative treatment of cancer patients. Training in the NIS/CEE was provided to improve: histology/morphology coding, quality control and data analysis.

b. Equipment, Supplies and Educational Materials

Key diagnostic and treatment technology was provided by US Partners. For example, the Hungarian Partners were given an infusion pump for the outpatient treatment of oncological patients; the Partnership in Zadar received a new colonoscope with a video system and a mammograph; Semipalatinsk was provided with centrifuges and a microscope (this Partnership also received furniture for their Cancer Registry Center).

Partnerships were also provided with materials to be used to educate professionals and patients. Textbooks, journals, protocols and other material for medical personnel covered: cancer epidemiology; cancer screening; management of cancer pain; oncology guide to chemotherapy; and treatment of thyroid cancer in childhood. Instructions on how to keep a cancer registry and manuals for improving tumor registration were also provided. In Zadar, the Partners received slides, videos concerning screening for colorectal cancer and screening for prostate cancer (to aid in the training of professionals), as well as pamphlets for public education; the Partners in V c also received brochures and videotapes with educational material for cancer patients.

c. AIHA Inputs

As well as sponsoring the exchange visits, the AIHA provided annual meetings and other training opportunities to enhance the development of programs in this area. As the Partner from Semipalatinsk described, these meetings, along with the establishment of Learning Resource Centers (which provided the technology to facilitate more modern types of communication) supported a mutually beneficial collaboration to improve care quality . AIHA also supported the attendance of some Partners at other international meetings, including the International Conference on Radiation Impact on the Population Health and an International Seminar on Cancer Registries.

3. Typical and Exemplary Outputs

Outputs for oncology programs were described in these four areas: a) organizational (management), b) financial, c) clinical, and d) community, region or country level changes. Typical and exemplary outputs in these four areas will be described in the sections below.

a. Organizational (Management) Outputs

A significant organizational output accomplished to some extent in each of the three Partnerships was the development of a cancer registry. In V c, the cancer database was set up and is now self-sustaining; Semipalatinsk and Zadar have also developed cancer registries (the system in Zadar at this point only includes all the newly diagnosed patients with malignant illnesses).

Partnerships reported the development of new positions and changes in the responsibility of personnel as a result of the new emphasis on screening for cancer and tracking cancer cases. The Partnership in Semipalatinsk established a Committee on Cancer Registry and created three new positions: a physician-abstractor (to fill in and control the cards on abstraction); an administrator of the Cancer Registry; and a computer operator. Semipalatinsk indicated that role relationships had changed, that democratic methods of management on behalf of the Cancer Registrar Center administration had been introduced; the introduction of a team approach was also described as a positive output in the other Partnerships.

Partnerships also described changes in systems for the provision of care. In Hungary, specialized outpatient services (including chemotherapy) were established; a specialist in surgery was appointed to lead the outpatient services for breast cancer patients. This Partnership indicated that the responsibilities of nurses increased as they got more support and autonomy with the establishment of protocols on the fields of pain management, lymphedema treatment and stoma treatment; they were given the ability to make independent decisions in pain management and in treatment of vomiting.

b. Financial Outputs

Partners were able to identify some changes in the financial area. In Semipalatinsk, the cancer registry has been created and is self-sustaining; in Zadar, the Partners have developed agreements with companies to finance the cancer screening program. Changes in the organization of the system of care (e.g., shift from inpatient to outpatient provision of some services) are expected to also result in changes in the financial area over time. However, as the Partner from Zadar described, it is difficult to answer this question, because of the current system of financing health

care, which is centralized and based on the State estimate. There are only the first signs of market relations present in health care .

c. Clinical Outputs

Significant changes in clinical practice were implemented in response to system modifications. In V c, treatment of patients became more organized and efficient through the introduction of new protocols (e.g., for pain management, for treatment of vomiting); two nurses were trained to specialize in ostomy therapy and chemotherapy. Services became more focussed on the patient, psychological aspects of the therapy...both physicians and nurses have a better connection with the patients . Patient clubs were developed for ostomy patients and for oncological patients. The respondent from Zadar reported that new chemotherapy protocols are applied and the preparation and protection of staff who prepare chemotherapy is improved.

Partnerships instituted educational programs for providers, patients and family members as well as the general population. In Zadar, Partnership representatives made frequent visits to general practitioners to encourage preventive check-ups; this resulted in the initiation of digitorectal examinations of most of the patients, breast examinations and the introduction of tests for occult bleeding from the gastrointestinal tract as part of a comprehensive annual exam. More patients are involved now in preventive check-ups and screening programs; there is also a more precise selection of patients who are to undergo specific diagnostic examinations, saving time, material and equipment.

Each Partnership developed new reporting systems based on data from their cancer registries, utilizing new cancer coding and data abstraction techniques. In Semipalatinsk, a Committee on Cancer Registry was created to control, analyze and eliminate errors; weekly conferences of physicians are devoted to the analysis of cards on abstractions. The cancer registry helps monitor patients until the final result: long-term remission or death.

d. Community, Region or Country Level Outputs

Partnerships described an impact on their region and nation as a result of activities in this program area. Semipalatinsk reported that the Regional Committee for the Eastern Kazakstan region on Cancer Registry Program Introduction was established; they will participate in efforts to establish a National Cancer Registry. Each Partnership reported improvements in community, regional or national information exchange: Semipalatinsk held joint seminars with cancer specialists from Almaty, Ust-Kamenogorsk and Pavlodar; V c and Zadar have developed close cooperation with

the local media in publicizing prevention programs. The Partnership in V c also sponsored a regional conference for oncology nursing.

4. Model Outcomes

Outcomes for oncology programs will be presented below in these three areas: a) organizational (management), b) financial, and c) clinical. (Community, region or country level outcomes are not yet measurable.)

a. Organizational (Management) Outcomes

A measurable increase in staff efficiency and a measurable decrease in patient length of stay were potential outcomes in this area. Each Partnership anecdotally described having developed more efficient systems of care (e.g., faster diagnosing of cancer) as a result of activities in this program area. The cancer databases which were created provide a tool to investigate the efficiency of therapeutic work and to choose the appropriate treatment, as well as an opportunity for patient follow-up. The Partnerships in Zadar and V c each reported decreases in average length of stay in the hospital for surgical patients. However, at this point none of these outcomes had been quantified; this data is expected to be available in the near future.

b. Financial Outcomes

Long term cost savings are expected as a result of early screening/detection services; as the Partnership in Zadar described: over 200 colonoscopies have been done and around 100 cases of colon cancer have been detected; the screening program and diagnostic equipment will pay for themselves over time. The Partnership in V c indicated that shifting care (including chemotherapy of oncological patients) from inpatient to outpatient services, and shifting some services to home care is resulting in cost savings. However, none of these savings were quantified at this point.

c. Clinical Outcomes

As a result of the activities of the Partnerships in this program area, decreases in morbidity and mortality are expected in the future; it will take years of following the patients who are currently being registered to actually determine this outcome. As the Partner from V c described, the cancer database which was established in the scope of the Partnership enables the assessment of morbidity and mortality data, which can be used to target screening programs for the risk population and for geographically high risk areas to facilitate an early diagnosis of cancer. The Partnership in Zadar reported that more tumors are being detected at an early stage of the disease;

it is expected that by monitoring those patients their death will be delayed or mortality will be decreased.

D. Home Care/Hospice Care

Two Partnerships in the CEE reported on their progress in home care/hospice care. This included: V c Municipal Hospital in V c, Hungary, and Bikur Holim Hospital in Riga, Latvia. Pre-existing conditions, key inputs, typical and exemplary outputs, and model outcomes are described below for these two Partnerships.

1. Pre-Existing Conditions

In Hungary as elsewhere in Central and Eastern Europe, home care was nonexistent prior to Partnership activities. It was seen by the Partnership in V c as a basic requirement for safely decreasing length of stay . This program area was designed to complement other programs which were being implemented to establish one day surgery and in other ways decrease the hospital s patient overload. Financing as well as a lack of expertise in this area had previously served as barriers to the implementation of home care programs.

The concept of hospice care was entirely new to Latvians prior to their Partnership. The geographic area covered by the program had a high percent of elderly in the population; the Partnership intended to implement a program in gerontology as well as hospice care (hospice care for terminally ill children as well as adults would eventually be provided). In 1992 a back building was upgraded which facilitated the implementation of these programs.

2. Key Inputs

Inputs will be described in three areas: a) activities during exchange visits between the US and CEE partners; b) equipment, supplies and educational materials provided by the US partners; and c) inputs provided by AIHA.

a. Exchange Visits

Three visits were made to the CEE by US Partners, and two were made to the US by the CEE in this program area (only one Partnership reported this information). Exchange visits were seen as important, particularly visits to the US at the onset of Partnership activities: to start an entirely new system (like home care) the personal experience of seeing it in function and understanding the whole operating environment is essential . Visits made people inevitably confront the fact that many good solutions are possible for a problem and the solution is not always within the framework

of our previous experience . When someone needed to learn a lot to become expert , they were able to spend an extended time in the US (e.g., a hospital chaplain from Latvia spent a year in the US). Visits to the CEE were helpful in disseminating information to a large number of health care professionals at the same time. Training included special courses on providing home care for nurses; a conference on goal directed care of terminally ill patients and their families; and courses in financial management/administration. Latvia hosted an international conference on hospice care in 1996. The Partnership in Latvia reported that the period of time between visits was also put to good use: they worked with their Partners through E-Mail to implement knowledge gained through exchange visits.

b. Equipment, Supplies and Educational Materials

Comprehensive materials were provided to assist CEE partners in implementing home care/hospice care. This included: accreditation requirements; clinical guidelines; nursing documentation; job descriptions; leaflets on patient rights; and public relations promotional materials. Texts on hospice care and outcome based quality improvement were also provided.

c. AIHA Inputs

AIHA conferences were instrumental in bringing together people who were interested in this program area. As indicated by the respondent from Hungary, these conferences provided an opportunity to be introduced to solutions others invented , as well as disseminate their own experiences. Technology provided by AIHA (Learning Resource Centers, including Internet access) provided a quick and easy way to communicate with partners , as well as access to the professional literature.

3. Typical and Exemplary Outputs

Outputs for home care/hospice were described in these four areas: a) organizational (management), b) financial, c) clinical, and d) community, region or country level changes. Typical and exemplary outputs in these four areas will be described in the sections below.

a. Organizational (Management) Outputs

In V c, an independent agency was established to provide home care services (legislation excluded hospitals from the possibility of running this type of service). This agency introduced a supervising nurses system; these nurses were responsible for training new nurses then monitoring the work of their colleagues. This new system led to the need for changes in the operations guideline for the

hospital, including the establishment of a home care coordinator's position and a discharge planning system (patients could be discharged earlier, given the availability of home care services).

In Riga gerontology and hospice units were combined (for total of 75 beds); this is now a separate branch hospital led by a Chief Administrator and supervised by the Bikur Holim General Director. A team for delivering hospice care services was developed, which included new roles for the hospital chaplain and social worker, and the introduction of the position of an assistant nurse to work with nurses to provide a majority of the hospice care services.

b. Financial Outputs

Financing had served as a significant barrier to the introduction of these new services. This was overcome in V c by establishing the home care service as a self-sustaining private organization. The branch hospital in Riga was given a special budget through the State Illness Funds and a computer system to assist with financial accountability (e.g., the control of medication and materials utilization). The structure for staff salaries in the hospice care program was changed to coincide with the new division of work responsibilities (e.g., use of nurse assistants).

c. Clinical Outputs

The most significant output was the introduction of new systems of care in Latvia and Hungary; over 200 patients were provided hospice care in the first year of this program in Riga. Especially in V c, this new system significantly changed patient flow: patients who need nursing only are either not taken to the hospital or spend less time there. There have also been fewer admissions to the Emergency Room as patients are now being referred to home care services.

Changes in specific types of clinical care coincided with the introduction of these services. For example, improvements in the care of terminally ill patients in Riga included new pain management practices, providing greater relief to the patients most in need. In V c, ostomy treatment was improved in home care service, and physical therapy and electrotherapy were made available to patients within the home.

In each Partnership, documentation of patient care improved, along with new protocols for care (particularly for nurses); there was more consistency in clinical practice. Physicians and nurses learned to function more as a team; each became more involved in patient education both in the hospital (including informing patients about the availability of the new services) and in the home care setting.

d. Community, Region or Country Level Outputs

Partnership activities had a impact beyond their original institutions. A new specialty was introduced in the Latvian health care system, the specialist in palliative therapy; within the Latvian Association of Palliative Therapy there is a section of terminal patients nurses. There is a rotation now in hospice care at the Latvian Medical Academy. In Hungary, members of the US and Hungarian Home Care Team have visited the Ministry of Welfare to meet with the coordinator of home care politics of the Ministry.

4. Model Outcomes

Outcomes for home care/hospice will be presented below in these two areas: a) organizational (management), and b) financial. Quantifiable outcomes related to home care/hospice were not reported in either the c) clinical area, or at the d) community, region or country level.

a. Organizational (Management) Outcomes

Potential outcomes include: measurable increase in the quality of care (patient satisfaction); a measurable increase in staff efficiency; and a measurable decrease in patient length of stay related to inputs and outputs in this program area. The respondent from V c stated that they had implemented patient satisfaction surveys, and that these indicated that the patients were pleased with their care (detailed response rates were not reported). Riga also reported significant improvements in quality of life issues for the patients receiving hospice care, though patient satisfaction had not been systematically measured. A decrease in average length of stay was reported by each Partnership (but not quantified).

b. Financial Outcomes

Potential financial outcomes included: evidence of cost savings; evidence of new sources of revenue; and evidence of reduced deficit related to inputs and outputs in this program area. The salary structure in hospice care in Riga was changed to coincide with the level of work responsibility: use of nurse assistants and overall staff structural changes made it possible to decrease expenses by 20 percent to 25 percent. The home care system in V c had been created to decrease hospital length of stay; this Partnership reported lower costs for care associated with decreased length of stay (these cost savings were not quantified).

VI. RESOURCE MANAGEMENT AND HUMAN RESOURCE DEVELOPMENT

There was a need to develop effective management practices and institute support for staff skill development in the NIS/CEE to complement the changes being made in the service delivery system. US Partners and AIHA each provided programming for the NIS/CEE in this area, focusing on

workforce planning, quality assurance (including certification programs), operational and capital finance, and other germane topics. AIHA launched a joint effort with the Association of University Programs in Health Administration (AUPHA) to provide health management programming to the NIS/CEE Partners. AUPHA is an association of university-based education programs, faculty, leading executives, and provider organizations whose interest is the development and continuous improvement of health management education. Efforts were made to strengthen the skill level of personnel through on the job training as well as improvements in formal education systems.

This chapter will describe the NIS/CEE Partners' self-assessment of these efforts, including programs which focussed on:

- A. Health Care Administration and Hospital Management;
- B. Nursing Reform; and
- C. Health Management Education (HME).

The structure for describing findings in these program areas (except for HME) includes:

- 1. a description of the pre-existing conditions in the program area;
- 2. key inputs described in the self-assessments;
- 3. typical and exemplary outputs described in the self-assessments; and
- 4. model outcomes achieved by the Partnerships in the program area.

A. *Health Care Administration and Hospital Management*

Six Partnerships reported on their progress in health care administration and hospital management. This included two in the CEE: University Hospital Center Mother Theresa, University Maternity Hospital and Central Trauma Hospital, in Tirana, Albania; and Sveti Duh General Hospital, University Hospital for Infectious Diseases, and Children's Hospital for Respiratory Diseases in Zagreb, Croatia; and four in the NIS: Pirogov First Municipal Hospital in Moscow, Russia; the Central Clinical Hospital in Moscow, Russia; Medical Center of St. Petersburg in the Name of Sokolov (formerly Hospital No. 122), in St. Petersburg, Russia; and City Clinical Hospital No. 2 and Vladivostok Medical Institute in Vladivostok, Russia. The efforts of these Partnerships in this

program area are described below. This program area includes substantial inputs from AIHA, who worked with AUPHA and Partners to develop management and leadership activities.

1. Pre-existing Conditions

In both the NIS and CEE countries the organization of the health care delivery system was hierarchical. This meant that within each region of the country the district hospitals, polyclinics, spas, and other institutions were organized in such a way that they responded to a regional health authority that, in turn, responded to the national health authority in terms of staffing patterns, technical interventions, facility development, and capital improvements. The health care system could be characterized as a centrally run state monopoly. Measurements of effectiveness had more to do with the utilization of the facility than the efficiency by which it was run.

Between 1989 and 1992, with the breakup and disintegration of the old regimes, dramatic changes occurred in the NIS/CEE. Decentralization was applied in a wide variety of different organizational settings and was sometimes synonymous with privatization. At the same time there was a parallel decline in the gross domestic product of these countries; the amount allocated for health care diminished dramatically. Since the health care delivery system was never generously supported by the national government, severe curtailment in budget resulted in increased budgetary constraints in hospitals and other institutions delivering health care in these countries. Most of the managers of health care organizations were physicians who had specialties in clinical areas and were not necessarily proficient in the management of large organizations requiring proper budgeting, allocation of resources, or managerial controls; the result was a breakdown of many of the facilities providing health care in the NIS/CEE. Unlike Western Europe and the United States, there was no managerial class that had been developed over the years trained to supervise large, complex institutions with their own budgeting processes and their own control. To a great extent responsibility was relinquished to regional and national structures, and the managers and individual institutions acted as a conduit for the funding that came based upon facility utilization and the ability of the manager to work the system for the benefit of their institution. Given these deficiencies it is understandable that many of the hospitals, ambulatory health systems, and other health care systems had problems confronting the sudden constraint on funding that occurred.

2. Key Inputs

Inputs will be described in three areas: a) activities during exchange visits between the United States and NIS/CEE Partners; b) equipment, supplies, and educational materials provided by US Partners; and c) inputs provided by AIHA.

a. Exchange Visits

An average of 13 visits to the NIS/CEE sites directed at this program area were made during the Partnership by the US (a range from 3 to 36 in the Partnerships that reported this information); and an average of 9 visits to the United States were made by the NIS/CEE Partnerships (a range from 3

to 20 in the Partnerships that reported this information). Since the concept of training managers was so personnel intensive, the various Partners in many instances had significant numbers of participants either in the US or in their own countries working with each other to help develop management expertise. For example, over 100 Croatians traveled to Lebanon, New Hampshire for training; in turn, some 35 professionals from the United States worked in institutions in Zagreb.

Training during the exchanges focussed on restructuring the hospital in order to meet problems related to cost and quality of services. Topics included: comparative financial and management strategies; professional standards for medical personnel; hospital information gathering; prospective budgeting; control of purchasing; and continuous quality improvement. In the words of the St. Petersburg Partnership: maintaining financial stability has always been a major problem for our institution. Participation in the Partnership-sponsored educational activities provided us with better understanding of financial mechanisms essential for survival in the market economy. In addition, the plan for seeing the attraction of additional sources of revenue allowed us to establish direct contacts with insurance companies and other institutions as well as increase volume for fee-for-service programs. The Moscow Partnership had an extensive program, Program on Refinement of Skills and Medicine attended by 39 of the nurses who were going to work in the Western style hospital. These same nurses also underwent an intense English course and extensive computer training as well as seminars on customer service. These training seminars continued on a weekly basis throughout the remainder of the Partnership.

b. Equipment, Supplies, and Educational Materials

Two hospitals in Russia (the Medical Center of St. Petersburg in the Name of Sokolov and the Central Clinical Hospital in Moscow) were committed to the establishment of a micro-hospital modeled on Western Europe and the United States. As a result the equipment and supplies they received from their US Partners were intended to upgrade their respective clinics and provide contemporary furnishings as well as current medical equipment. In St. Petersburg, the Medical Center received \$100,000 (US dollars) donated to help in the building renovation as well as extensive furnishings and equipment such as defibrillators, bedside suction devices, and tonometers. This hospital also received uniforms for patients and staff and a significant amount of medication and medical supplies. Similarly, the hospital in Moscow received funding for construction materials for the renovation of the department, medical equipment furnishings, medical supplies, and uniforms for personnel.

The other four Partnerships were focussed primarily on the management aspects of their health care delivery system; most of the materials provided by their US Partners focussed on improved

management techniques and protocols for the health care delivery system. For example, the Partnership in Vladivostok received management materials and guidelines outlining health care management in the US, as well as guidelines to develop management strategies in financing, establish information systems, cost accounting and cost allocation. The Partner hospitals in Zagreb received a considerable amount of information from their Partners on clinical improvements and especially continuous quality improvement. They received a library on leadership development that included the Alpha Manual of Health Management.

c. AIHA Inputs

Partners participated in courses on hospital health systems management and administration which were provided by AIHA in collaboration with AUPHA. Inputs included regional two-week management courses designed to: extend an understanding of basic functions of health care management and to develop skills in leadership and problem solving; create a framework for addressing specific managerial issues; and promote a systems view of health care management. Participants received the *AUPHA Health Administration Module Series*, which included facilitator's guides (to conduct further workshops) and user's guides designed to help participants retain their new knowledge. A series of advanced workshops on topics including budgeting/financial planning, management information and decision making, and quality assurance were also offered. Partners who participated in financial management and cost identification courses were provided with relevant computer hardware and software; the Albanian Partners indicated that this program was now in use for planning purposes in each department in their hospital.

Partners also participated in two or more of the AIHA-sponsored annual conferences in both the NIS and CEE. Many of these conferences had management workshops as part of their conference program. These workshops topics included: financial management in health care settings; health care marketing strategies; the basics of health care management; and efficient pharmacy management in health care settings. In Vladivostok, AIHA sponsored a conference, *The Policy And Methods In The Field Of Cardio-Vascular Disease Prevention*, as part of the Russian health care reform framework. In this same Partnership AIHA arranged field trips to the Minsk Children's Hospital, St. Petersburg Central Medical Sanitary Unit, and the Moscow Municipal Clinical Hospital.

In each of these Partnerships, AIHA created communication capability in the form of extensive hardware and software for e-mail, online conferencing, and for the transfer of information through web-sites. AIHA also provided equipment to support further training, including slide projectors, copiers, and leadership manuals.

3. Typical and Exemplary Outputs

The outputs for management/leadership programs will be described in four areas: a) organizational (management), b) financial, c) clinical, and d) community, region or country level changes. Typical and exemplary outputs in these four areas will be described in the section below.

a. Organizational or Management Outputs

In the new micro-hospitals that were organized in St. Petersburg and in Moscow, there were significant changes in the organization of that department within the hospital. For example, the Medical Center of St. Petersburg identified a nurse as the head of a clinical department, the first time a nurse had ever been appointed as a manager of a clinical department. In the Moscow Clinical Medical Center teams of physicians and nurses were developed to work in what was referred to as the International Patient Department. In this department the management of the hospital created protocols for foreign patients and developed new job descriptions for nurses, dietitians, and junior medical personnel. Nurses were then identified who would be in charge of executing protocols for foreign patients admitted into the unit. In each of these Partnerships, personnel policies were changed so that staff members were measured against established performance standards.

In the remaining four Partnerships, significant changes occurred in the organization and administrative structure of the hospital and/or department. For example, City Clinical Hospital No. 2 in Vladivostok initiated numerous changes, including bed reduction, establishment of medical procedures, improved record keeping, greater control over hospitals admissions, and the initiation of pre-admission examination of patients. In Albania similar changes occurred in the development of improved employment policies, job descriptions, and record keeping both on patients and personnel. In the Sveti Duh General Hospital in Zagreb much of the organizational focus was on the creation of controls over antibiotic consumption and the use of pharmaceuticals in the hospital. This included organization of a committee that monitored antibiotic consumption and the introduction of an order entry format for utilization of these drugs. They held regular weekly meetings with clinical pharmacologists and clinical microbiologists with physicians from various departments such as emergency care where regular discussions about the therapeutic problems in prescribing antibiotics were initiated. This hospital also created a leadership development program that was used to indoctrinate new staff on security measures, work rules, and health prevention.

b. Financial Outputs

In the two microhospitals, the major financial change that occurred was the increase in revenue as a result of fees-for-service that were charged for the care of private patients. For example, the Microhospital in the Medical Center in St. Petersburg was reimbursed for diagnostic services, for the daily bed charge, for physician services, and other related services.

Significant financial changes took place in the other Partnerships, as well. In Zagreb, the University Hospital for Infectious Diseases recorded a 30 percent reduction in drugs used in the tuberculosis ward, resulting in a financial savings in terms of pharmaceutical costs for the entire hospital. In the Sveti Duh Hospital (also in Zagreb) savings were registered in the use of antibiotics. This hospital has set up a shared service contract so that the most cost effective drugs were purchased and the contracts were negotiated to guarantee the least expense for antibiotics. The Vladivostok Municipal Clinical Hospital No. 2 established a billing department which is responsible for transactions with the Territorial Mandatory Health Insurance Fund, other insurance companies and individual fee for service patients. In the cost control program that was initiated in the hospital, the financial planners used deviation analysis in order to control cost. This analysis shows the relationship of obtained funding for projected costs and actual costs. In addition, various clinical departments used cost effectiveness studies to determine the cost of clinical care arranged in diagnostic related groups. Included in this DRG analysis was the analysis of the acuity of the patient and the quality of the outcome of the patient. As a result of all of these financial initiatives the hospital was able to increase its revenue, improve its purchasing program for pharmaceuticals, and negotiate improved contracts with the public and private insurance companies. The result was a significant reduction in the budget deficit that has plagued the hospital in prior years.

Perhaps the most dramatic financial outputs in the Vladivostok Municipal Clinical Hospital No. 2 were the procurement in 1995 of a \$50,000 grant for implementing innovative approaches to health care financing (the grant was used by the hospital to develop a cost accounting system and to implement a step-down method for cost allocation), and the equipment and supplies valued at \$5,000,000 they received from a decommissioned US Department of Defense hospital in Japan.

c. Clinical Outputs

In the microhospitals in St. Petersburg and Moscow, staff received training in improved patient care. Included in this upgrading of clinical skills were techniques for more appropriate measurement of blood glucose, introduction of catheters, drug control on the ward, and better record keeping. These two hospitals emphasized improved professional/patient relationships by initiating something similar to a customer relations program. Patient amenities in the clinical environment were improved including nutrition, patient education, and the introduction of

diagnostics within the ward itself. Of critical importance in each of these hospitals was the introduction of more sophisticated patient protocols and patient information and data collection. These included initial histories of the patients taken by nurses as well as physicians and ongoing documentation of patients within the unit during the course of their stay. Those hospitals indicated that nursing records and patient histories became much more comprehensive as a result of the attention paid to information flow.

In the Municipal Clinical Hospital No. 2 in Vladivostok, considerable emphasis was also placed upon the evaluation of the patients and the patient flow throughout the hospital. Of equal note is the introduction of various medical technologies that helped to improve the throughput of patient care by reducing the length of time in the diagnostic setting and/or the length of time in the entire hospital stay. It was the general feeling of the professionals in the hospital that as a result of the new administrative initiatives, treatment strategies had improved and the length of treatment reduced to produce better outcomes. Similar clinical progress was described in the hospitals in Zagreb. For example, in the Sveti Duh Hospital the introduction of controls for antibiotic use resulted in much more appropriate application of antibiotics to those patients needing this intervention and the reduction in the inappropriate use of antibiotics for their patients who did not require that intervention. Similarly in the University Hospital for Infectious Diseases the introduction of a computer management program in the pharmacy improved the quality of drug distribution by controlling doses and overseeing interaction of medicines, especially when contraindications were identified for specific patients. There was also increased attention of physicians to the introduction of drugs in the patient such as the length of antibiotic use and changes that occurred in oral therapy.

d. Community, Region or Country Level Outputs

The various Partnerships reported very little impact on the community, region, or nation as a result of management and leadership programs that were initiated in their respective Partnerships. This is primarily due to the fact that the programs were tailored to the institutions and the staffs within the Partnerships and were not meant to have an immediate impact on the surrounding community or region or nation. They have been used, however, as models within their community or region that in the future can be imitated by other institutions and hospital organizations within their area. In the Municipal Clinical Hospital No. 2 in Vladivostok, the Health Care Department of Primorsky Krai Regional Administration developed models for the cost of care and the pricing of services based upon the activities within the hospital. This work resulted in the 1998 territorial program for state guaranteed health care delivery for the public health insurance company for this particular region. The Partnership in Albania has proposed a shared purchasing program for all hospitals in

the nation which is under review with the Ministry of Health. In Zagreb, the initiation of hospital pharmaceutical practices resulted in a section being established in the pharmaceutical society of Croatia that focussed upon management techniques in the hospital pharmacy. The Croatian Health Insurance Fund was interested in the protocols that were established for antibiotic use in the Sveti Duh Hospital. Of equal significance was the establishment of several conferences open to health institutions in the Republic of Croatia that had as their primary aim improved management practices within the hospitals, development of nurse Partnership programs, establishment of a more defined role for hospital pharmacists, and improved infection control.

4. Model Outcomes

Outcomes for the management and administrative leadership programs will be presented in the a) organizational (management); and b) financial areas. Since many of these management principals were introduced across a broad spectrum of hospital activity, measurable outcomes would be relatively rare in the c) clinical or d) community, region or country level.

a. Organizational (Management) Outcomes

Potential outcomes include: measurable increase in the quality of care (patient satisfaction); a measurable increase in staff efficiency; and a measurable decrease in patient length of stay related to inputs and outputs in this program area. Although patient satisfaction measures had been introduced in some of these Partnerships, the results of the surveys were not yet available. In the Microhospital in St. Petersburg the most significant organizational outcome was the reduction in the average patient length of stay from 12.1 days in 1995 to 8.5 days in 1997. This would be a length of stay comparable to both European and American standards. A similar reduction in length of stay was identified in the International Patient Department in Moscow. The Municipal Clinical Hospital in Vladivostok identified several organizational outcomes. The hospital reduced its bed complement from 1,030 in 1992 to 979 in 1995. The hospital also opened 95 day beds thereby increasing the throughput of patients through this ambulatory setting. Overall the average length of stay in the hospital was reduced from 14.4 days in 1992 to 12.7 days in 1997. In the trauma unit, there was an 8 percent reduction in the average length of time for treatment and a 39.1 percent reduction in the number of pre-surgery patient days for preadmission testing.

a. Financial Outcomes

Potential financial outcomes included: evidence of cost savings; evidence of new sources of revenue; and evidence of reduced deficit related to inputs and outputs in this program area. As previously described, a 30 percent reduction in the use of antibiotics was identified in the Sveti Duh

Hospital; this resulted in a cost savings of over \$206,000 (US dollars). This was the result of a systematic use of antibiotics on a unit dose basis; therapeutic decisions are made based upon data and on microbiological results. All of this stems from the analysis of the antibiotic order form which is specific to each patient dosage.

B. Nursing Reform

Nurses have come to play a key role in primary care, disease prevention, and health promotion in the NIS/CEE; nurses have been essential figures in the reform of health care delivery settings. This is a program area that impacted each of the Partnerships and most of the other program areas to some extent. In this section, the efforts of the sixteen Partnerships which described nursing reform as one of their three programs on the quantitative self-assessment will be described. This includes one Partnership in the CEE: University Clinical Center of Tuzla in Tuzla, Bosnia; and fifteen in the NIS, involving: two Partnerships in Armenia, each located in Yerevan (one with the Emergency Scientific Medical Center of the City of Yerevan, and the other Partnership with Erebuni Medical Center); one Partnership in Georgia, in Tbilisi (City Hospital No. 2 and Tbilisi State Medical University); two Partnerships in Kazakhstan, one in Almaty (Kazak Scientific Research Center of Pediatrics and Children's Surgery, and Almaty First Aid Hospital), and one in Semipalatinsk (The Inter-Oblast Oncology Dispensary, the Oblast Clinical Hospital, the Oblast Children's Hospital, Emergency First Aid Hospital, the Diagnostic Center, and the Semipalatinsk Gynecology Center); one Partnership in Kyrgyzstan, in Bishkek (the Institute of Obstetrics and Pediatrics, and the Institute of Oncology and Radiology); four Partnerships in Russia, including two in Moscow (one with the Central Clinical Hospital in Moscow, and one with Pirogov First Municipal Hospital), one in Stavropol (Stavropol Regional Hospital and City Hospital No. 4), and one in Vladivostok (City Clinical Hospital No. 2); one Partnership in Turkmenistan, in Ashgabat (the Medical Consultive Center in the Name of President Niyazov); one Partnership in Tajikistan, in Dushanbe (the City Medical Center); two Partnerships in the Ukraine, including one in Lviv (Railway Hospital), and one in Odessa (Odessa Oblast Hospital); and one Partnership in Uzbekistan, in Tashkent (Second Medical Institute).

The AIHA has worked to support and enhance the efforts of each of the Partnerships in this program area. Two of the most tangible indicators of their essential role in coordination and support are the Nursing Learning Resource Centers (NLRC) created at many Partnership sites, and the nursing task forces assembled by AIHA in the NIS and CEE. These task forces were designed to inspire nurses to be teachers, leaders and mentors, expanding and upgrading their clinical and administrative roles. The task forces produced a leadership skills workbook to provide basic

guidelines on nursing education, professional organizations, budgets and hospital operations, mentoring and leadership skills.

1. Pre-Existing Conditions

Prior to the work of the Partnerships, a nurse's duties in the NIS/CEE could be described as parallel to the duties of nurses aides in the US. Nurses performed dietary tasks, housekeeping chores and other support functions; there was little they could decide upon independently. There was no equivalent in the NIS/CEE nursing system to the US position of registered nurse.

To utilize nurses to improve the quality and efficiency of care, there was a need to develop new standards in nurse training and clinical practice. The system which existed offered few learning resources for nurses, either in school or in practice. As a respondent from Almaty described, educators of nurses had discussed the idea of reforming the role of nurses in the late 1980s, but they found little support for the idea. Professional nursing associations did not exist.

2. Key Inputs

Inputs will be described in three areas: a) activities during exchange visits between the US and NIS/CEE partners; b) equipment, supplies and educational materials provided by the US partners; and c) inputs provided by AIHA.

a. Exchange Visits

An average of 13 visits to the NIS sites directed at this program area were made during the Partnership by the US (a range from 5 to 35 visits in the Partnerships that reported this information); and an average of 8 visits to the United States were made by NIS/CEE Partnership representatives (a range from 2 to 18 visits in the Partnerships that reported this information). Many exchanges had other topics as a primary focus, but training in that area typically involved reforming the role of nurses. The number of participants in this program area was often in the hundreds, involving the whole nursing staff of Partnership institutions; Semipalatinsk reported 1550 participants in this program area.

Visits to the US provided nurses from the NIS/CEE with an opportunity to observe the US system, which was an incentive to change. As the Partner from Bosnia described, visits to the US resulted in higher motivation to reach the goal and achieve working conditions observed at the Partnership hospitals. A respondent from Ashgabat shared that visiting the US medical facilities and Partner organizations was really very efficient and useful. There we got familiarized with the new

principles of medical care...nurse education is paid much attention to and is in fact one of the priorities . Exchanges typically lasted for a few weeks, although nurses from Bishkek received training in the US for three months and two nurses from Yerevan (Erebuni Medical Center) participated in post-graduate clinical training at the UCLA Medical Center. Some Partnership coordinators and many key participants from the US were nurses, which also stimulated change; many US Partners accompanied their NIS/CEE Partners to meetings with government officials.

Trainings were provided to orient participants to the new role of nurses, then to introduce new clinical and administrative skills. Seminars often included physicians and nurses together for the first time; this was also the first time many physicians from the NIS/CEE were exposed to nurses (from the US) in the role of trainer. Training topics included orientation to the new role of nurses (e.g., management and leadership in nursing care; the role of the nurse instructor; establishment of professional associations; workplace conflict resolution), and opportunities for improvement of clinical skills in particular areas (e.g., the nurses role in the clinical and diagnostic process; newborn resuscitation; hospital acquired infection: prevention and monitoring). Many of the trainings rendered to nurses in specific clinical areas have been described in other sections of this report. Workshops were also provided for some Partnerships about developing curriculum for nursing schools and evaluating the skill level of nurses.

b. Equipment, Supplies and Educational Materials

US Partners typically supplied textbooks, manuals and journal related to the training topics (e.g., infection control; leadership in nursing). Visual aids (videos, brochures, models of kidneys and breasts) and equipment (e.g., televisions and video recorders; overhead projectors and screens; printers; copiers; computers and software) were also provided to support the information dissemination efforts of NIS/CEE Partners.

Many US Partners contributed important medical supplies and equipment to support the new role of nurses, including: disposable gowns and caps; blood pressure gauges; disposable IV systems; stethoscopes; syringes; and gloves. The equipment provided for particular clinical areas has been described in other sections of this report. Nurses were trained to use these supplies and equipment (when appropriate) and to maintain the equipment.

c. AIHA Inputs

As indicated previously, AIHA played an important role in facilitating efforts in this program area. As a Partner from Tashkent stated: we think that such a fruitful development of Partnerships was possible only thanks to large work and assistance of AIHA, as it works out major programs and

provides financing for their execution, and this makes it possible to develop and extend contacts . Annual conferences sponsored by AIHA for the NIS and CEE included workshops on nursing care and often featured reports from the nursing task forces; AIHA also organized separate conferences focusing solely on nursing reform for the NIS and CEE Partnerships, as well as for particular regions and countries. AIHA supported the participation of nurses from the NIS/CEE in other relevant international conferences and arranged field visits for Partners to other institutions.

AIHA supported information exchange in many ways, including through the establishment of Learning Resource Centers and, in some cases, more specialized Nursing Learning Resource Centers (NLRC). NLRCs provided the resources to encourage independent learning as well as enhance traditional teaching methods. As the Partner from Yerevan indicated, the AIHA provided the NLRC with everything necessary for conducting training sessions . Help with curriculum and the structure of trainings were also provided.

The Partnership in Bishkek received a unique form of aid from AIHA. As the respondent described: AIHA and Partners provided a great deal of assistance to our Institute as regards the issue of carrying out examination and treatment of the populations of the most vulnerable from the point of view of ecology districts of Kyrgyzstan - Maily - SUU. At the cost of the funds allocated by AIHA, the Institute sent three teams of physicians and nurses to this town who were able to examine over 5000 citizens and conducted 51 surgeries for 49 patients .

3. Typical and Exemplary Outputs

Outputs for nursing reform were described in these four areas: a) organizational (management), b) financial, c) clinical, and d) community, region or country level changes. Typical and exemplary outputs in these four areas will be described in the sections below.

a. Organizational (Management) Outputs

Nursing became an independent field in medicine, improving the status and professionalism of nursing. The structure of nursing was changed in Partnership institutions, as new positions were created to correspond to the level of training nurses had received. As described in other sections of this report, nurses were given more responsibility in many clinical areas including surgery, neonatal resuscitation and admission procedures. In infection control, nurses collect and analyze data, detect and eliminate errors in nurses work and in work in the department in general. Perhaps most significant was the role nurses came to play for the first time in the leadership of institutions; nurse supervisors and nurse managers (chief nurse) positions were created. In particular, nurses were appointed as the lead of nursing departments - positions previously held by physicians. In

Vladivostok, head nurses take part in the decision making process affecting hospital policy; in Yerevan, the Nursing Director participates in developing and implementing policies in the health care institution ... ensuring the integration of the nurse s performance and their relations with physicians. These were only a few of the many examples of the new leadership role of nurses.

New systems were developed for training nurses, including new curriculum in medical colleges and new continuing education programs available to nurses within hospitals and through colleges (e.g. night school). For example, in Almaty a new 3 to 4 year curriculum for nursing has been developed, the first of its kind in Central Asia. The curriculum provides for basic nurse education as well as expanded clinical practice and administrative/managerial training; nurse managers carry out some of the training. A professional nurse has been appointed as the Deputy Director of the Nursing College for the first time in Armenia. Most Partnerships described creating nurse-instructor positions to insure the continued education of nurses. Some Partnerships created demonstration units within their institutions to further enhance on-going training activities. Significantly, nurses are now trained in some areas by nurses, particularly regarding patient care and interaction with family members.

Many of the new training systems implemented procedures for overseeing the certification and credentialing of nurses. The quality of nurse s work is controlled in accordance with newly developed protocols; systems to evaluate skill levels and regularly validate nurse s competence have been introduced. In Stavropol, the Department of Higher Nursing Education was established, which is responsible for post-graduate education, certification and credentialing. The scope of responsibilities of the Senior Nursing Council were also upgraded. In Bishkek, the Nurse Training Center was established and certification of nurses has taken place; in Semipalatinsk, a Committee on Standards was established to work out the norms and standards for nurse work. Vladivostok uses questionnaires to determine the current level of a nurses experience; based on the results of this testing nurses are placed in training groups focusing on particular subjects. In Moscow (Central Clinical Hospital) a commission with nurses as participants ensures ongoing quality improvement in patient care.

The development of new job responsibilities and new positions made it necessary for these Partners to clarify organizational relationships throughout their institutions. A team approach (involving physicians, nurses and junior medical personnel) was introduced with increased responsibilities for each team member. As nurses gained management and leadership skills, they were instrumental in helping to develop a team approach. For example, in Bosnia, head nurses have a 15 minute meeting with their subordinate nurses on a daily basis; they solve problems immediately and are given more freedom in organizing nursing work.

b. Financial Outputs

The most typical (though not universal) output in the financial area related to nursing reform involved implementing a new salary structure to coincide with the various skill/training levels of nursing personnel which had been introduced (e.g., nurses aid, special nurse, nurse manager, nurse who is a teacher in medical school). The nurse manager salary was reported in some Partnerships to be comparable to that of a first year physician. Tashkent described how salary increases were linked to their system for skills testing of nurses (skills testing is conducted by nursing boards who work with Chief Nurses).

New salary structures were supported through cost savings in other areas (e.g., improved infection control practices which contributed to reduced complications), or to new financing systems (e.g., fee-for-service; new health insurance systems and contracting). Due to new staff efficiency, some positions were reduced or eliminated, which was also a source of funding for new salary structures (e.g., respondents from Bishkek and Tashkent each described that orderly positions were reduced or eliminated as a result of nursing reform). Almaty was supporting programs through providing clinical training at other sites. It was also generally noted that institutions training costs were minimized as most of the trainings provided through the Partnership did not require expenditures from their budget.

c. Clinical Outputs

Nurses acquired new clinical skills in many areas, including: administering emergency care; assessing a patient's condition at admission/triage; evaluation of newborn health status; participating in surgery; controlling hospital infection; installation and management of catheters; intubation; blood transfusion; cardio-pulmonary resuscitation and caring for patients on prolonged lung mechanical ventilation. Nurses had also learned to operate and maintain new equipment; for example, they learned laparoscopic diagnosis and treatment techniques, and to utilize reusable dialyzers. Many of these new skills have been described in other sections of this report.

The quality of nursing care increased through the implementation of new protocols/standards associated with these skills (e.g., protocols for surgical wound treatment; for chemotherapy; for infection control). Frequently nurses were provided with guidance in time management to adequately meet their responsibilities. New charting systems were developed and implemented, including patient care plans, which supported the new level of skills required by nurses. As the Partner from Almaty described, the introduction of new documentation promoted the execution of patient monitoring by nurses, ability to analyze a specific situation, ability to come to a decision and

make a conclusion in accordance with their competence . In Vladivostok, nurses have contributed to the development and implementation of the chart used for entering data on patients with hospital-acquired infections, as well as the implementation of the form which registers central, cubital and subclavicular catheter installation . Special charts have also been introduced to record the volume of services performed. Many Partnerships described quality control committees which (relevant to nursing) reviewed the quality of medical records and regularly assessed nursing skill levels. Information gathering in many cases was improved through the use of computers, another new skill acquired by nurses.

As the definition of nursing was altered, there were significant changes in the relationship between physicians and nurses. As a Partner from Odessa described: work as a team approach allowed nurses to understand their role in a successful treatment of patients and see themselves not as mere stewards to MDs but rather play an active role in therapy and treatment . (The team approach to patient care which was instituted was described under organizational outputs.) The introduction of the clinical nurse educator role was also important, in developing a mentor relationships between nurses and greater professionalism among nurses.

Many described that the team approach also resulted in a greater investment in relationships with patients, including more respect for patients (and their right to confidentiality) and an understanding of their psychological needs. The qualitative change in the relationship between nurses and patients was described by a respondent from Tashkent: if in the past medical nurses were common executors of doctor s prescriptions, now in the eyes of a patient she plays the role of a senior medical worker responsible for the patient s health. In Bishkek, nurses participate in making doctor s rounds and take part in patient care discussions. Nurses have been taught how to incorporate patient education into their clinical work; they are responsible for informing patients about surgical and other procedures, how to prevent surgical complications during hospitalization, and the care they will need after discharge (they also meet with patient s family members concerning home care). Nurses provide patient education regarding management of chronic disease, disease prevention and health promotion. In Bishkek, patients can make suggestions (through a questionnaire) related to their care, which the Partners felt stimulated adequate behavior of nurses (and physicians) in treatment.

d. Community, Region or Country Level Outputs

There were two substantial outputs which were common to many of these Partnerships: the development of professional nursing associations (the first time this group had organized as a profession), and the approval of nursing reforms at regional and national levels. The Partners

described in their self-assessment materials national nursing associations (e.g., in Armenia; in Kyrgyzstan; in Russia; in Uzbekistan; and in Georgia - including regional affiliates) as well as regional and local nursing associations (e.g., in Dushanbe; in Odessa; in Stavropol; and in Semipalatinsk). Many of these associations facilitated information dissemination through conferences and publications, including the journal *Medical Nurse of Ukraine* and *Hamshira* (Medical Nurse) published in Uzbekistan.

These Partnerships were actively working with the appropriate government offices to ensure the codification of new training and practice standards in nursing. New job descriptions (including skill level requirements), pay scales and training programs have been approved in many cases by the appropriate national bodies (e.g., the Ministry of Health; the Ministry of Education; the Ministry of Labor). In Yerevan (Erebuni College of Nursing) a three year nursing and midwifery curriculum was developed and approved; a Ministry of Health representative collaborated with US Partners and members of the Armenian Nursing Association to develop proposals on certification of nurses and midwives. In Odessa, nurses have participated in the work of the Educational Committee of the Ministry of Health in the Ukraine. The Partnership in Yerevan (at the Emergency Scientific Medical Center) created a Licensing Commission for nurses and a Nursing Council at the Ministry of Health, and a Nursing Education Chair at their National Institute of Health (inaugurating a state approach to nursing training).

4. Model Outcomes

Outcomes in these three areas: a) organizational (management), b) financial, and c) clinical are described below. (This program area has not been in place for a long enough period of time to demonstrate community, region or country level outcomes.) Many of the outcomes in particular clinical areas, in which nursing reform played a role, have been described in other sections of this report. It is anticipated that nursing reform will have a far ranging impact on the quality and efficiency of clinical care, leading to even more significant outcomes in the future.

a. Organizational (Management) Outcomes

Potential outcomes relevant to this program area include: an increase in staff efficiency; a decrease in patient length of stay; and patient satisfaction. Partners indicated that the equipment donated and training received have shortened length of stay; they also described significant improvements in the efficiency of nurses as a result of activities in this program area. As the respondent from Bishkek described: having worked out the standards and all-round patient care plan, having implemented them into practice, the medical personnel utilizes time in a more rational way . In Vladivostok, nursing staff efficiency increased by 4.6 percent between 1992 and 1997, as evidenced by a number of indices (e.g., decrease in the number of 24-hour beds; increase in the number of day beds; increase in the number of patients treated; essentially no increase in the average size of the nursing staff).

Many of these Partnerships reported positive feedback from patients (and/or the absence of complaints) concerning the new role of nurses. Several had implemented a system for collecting and analyzing patient satisfaction data; some reported this data and a few had pre- to post-program implementation data. For example, Odessa indicated 92 percent patient satisfaction with the quality of care, compared to 74 percent prior to the program. Tashkent noted an increase in patient satisfaction as evidenced through comments in *The Book of Comments* pre- to post-program implementation. The Emergency Scientific Center in Yerevan administered a patient satisfaction survey; about 80 percent of the intensive care patients polled expressed their complete satisfaction with the services they received. The Partnerships in Bishkek and Semipalatinsk each noted a minimum number of complaints on patient surveys; the complaints were related to financial issues. Moscow (Central Clinical Hospital) and Yerevan (Erebuni Medical Center) reported that survey results demonstrated high patient satisfaction; this Yerevan Partnership also indicated that physicians had been surveyed and that they validated the improvements made in clinical care.

b. Financial Outcomes

The use of more highly skilled nurses is reducing the need for more expensive physicians, which is expected to result over time in the development of a more efficient cost structure. Decreases in length of stay (as described in other sections of this report) decrease the cost of care; nursing reform has played a significant role in improving these statistics. It is impossible to delineate the role of nursing reform from the other factors involved.

c. Clinical Outcomes

Nursing reform has played a significant role in decreasing morbidity and mortality. In general, more timely diagnosis and improvements in patient care have contributed to improved clinical outcomes. A Partner from Dushanbe reported that neonatal mortality had decreased; the role of nurses in neonatal resuscitation contributed to this. The critical role nurses have played in infection control has already been described (many of the gains related to nursing reforms have been described in other sections of this report and will not be repeated here). In Tashkent, nurses were trained to work with diabetic patients to teach nutrition and reinforce the importance of management of their disease; the proportion of these patients with a repeated hospitalization decreased from 21 percent in 1996 to 17 percent in 1997. Significantly, Bishkek reported that the number of complications which could be attributable to a nurse's error had decreased (e.g., there had been about 40 cases per year of vein puncture until the introduction of improvements in nurses' skills through the Partnership; complications due to nurse error in patient care in cases of tracheotomy, gastronomy, and colonostomy-hyperthermia and swelling around wounds decreased from 10 percent to 2 - 3 percent of cases).

C. Health Management Education

This specialized partnership program was proposed by AIHA to improve health care management education, with the long term goal of improving the practice of health services management. There were five Partnerships in the CEE which focussed on this program area. The CEE Institutions participating in Health Management Education Partnerships included: The University of Tirana and the Ministry of Health in Albania; South Bohemia University, the Postgraduate Medical School, the University of Education, and Purkyne Medical Academy in Bohemia, Czech Republic; Palacky University in Olomouc, Czech Republic; the University of Medicine and Pharmacy Carol Davila, and the Institute of Health Services Management in Bucharest, Romania; and Trnava University, the University of Matej Bel, and the Health Management School in Slovakia.

Health Management Education (HME) Partnerships participated in a peer review process to support the development of high quality programs. These peer reviews provided feedback to the faculty on the content and delivery of HME programming; the possibility of benchmarking with other countries. Peer reviews also provided an opportunity for these programs to share strategies on marketing, sustainability, job placement and other issues. This process was facilitated by the Association of University Programs in Health Administration (AUPHA). Because this process was already in place, HME programs were required to complete only an adapted qualitative questionnaire for self-assessment (a copy of this questionnaire is in Appendix D). This section of the self-assessment report is a synthesis of HME Partnership qualitative responses. The structure for this section includes:

1. a description of the pre-existing conditions in the program area;
2. key inputs described in the self-assessments; and
3. benefits accrued through participation in an HME Partnership.

1. Pre-Existing Conditions

The countries in the CEE were in the process of moving from what remained of a central planning system to a free market economy. For example, in Romania new health insurance laws were being implemented - large scale changes were happening quickly. There was a prevalence of medical professionals in managerial positions; management and management education had previously received little attention. As a result, in the CEE the system was moving toward more local responsibility and more flexibility in budgeting at a time when the infrastructure to make effective decisions was not yet in place. It became evident that a new economic mentality could not be implemented without effective management practices being instituted. There was a need to help shape the professional development of health managers to support health care reform.

2. Key Inputs

Inputs will be described in two areas: a) activities during exchange visits (using a broader definition of this term); and b) equipment, supplies and educational materials provided by the US partners and AIHA (the qualitative questionnaire did not require that respondents specify in detail the source of their key inputs).

a. Exchange Visits

As a respondent from the Czech Republic described, exchange visits to the US provided a general broadening of our outlook - getting to understand realities we had up till then only read about in literature. This included the opportunity to interact with specialists in the field and see new

teaching methods in practice. Many exchanges focussed on faculty development (e.g., improving teaching methods, interpersonal management and consulting skills) and curriculum development (e.g., the sequencing and content of subjects; courses on comparative health systems - including payment systems). During visits to the CEE, US participants collaborated with their Partners and provided joint lectures or seminars. Some exchange visits involved extensive training; for example, seventeen residents and public health specialists attended three month training courses in health management at the University of Chicago. Videoconferencing was effectively used between exchange visits to share expertise.

AIHA recruited the AUPHA to provide technical assistance, including the facilitation of peer reviews (described above). Peer reviews included representatives from other HME Partnerships as well as AUPHA staff. AIHA also organized conferences on relevant topics, which provided important opportunities for peer interaction as well as training. As one respondent from the Czech Republic shared, it: filled us with pride that we work in this industry and was an incentive to further hard, creative work.

b. Equipment, Supplies and Educational Materials

CEE Partnerships were provided with the technical equipment and literature they required to support new multi-media teaching methods, including projectors and computers. Some US Partners provided relevant US journals, to facilitate an understanding of the research in the field. AIHA also provided equipment, supplies and technical assistance to improve the technological capacity of CEE Partners. In some cases, this included facilitating access to the Internet when this was not previously in place. The Internet improved communication between Partners, as well as providing another source of up to date information in the field.

3. Benefits Accrued

Due to their participation in a peer review process, HME Partnerships were not required to report either outputs or outcomes as part of their self-assessment. Further, it was recognized that the outcome of this type of program (improved health care management practices) will not become evident for a number of years when students have graduated then entered key positions in the field, effecting a critical mass to change the system. Therefore, this section describes only the self-reported benefits accrued by the CEE Partnerships.

Partnership activities resulted in either the creation of new health management education programs or the expansion of existing programs (e.g., creation of new specializations in health care

management, new graduate and/or post-graduate programs). For example, the Partnership was a trigger point for development of a new system of education in health management in the Czech Republic. Two different programs for three year Bachelor training have been established. The newly developed programs have been accepted by the Ministry of Health and Ministry of Education; Ministry of Education approval includes coverage of student costs. In Albania, new concepts in management were introduced at the University of Tirana.

Preliminary work in Romania in this area had already been accomplished as a result of a loan from the World Bank to develop a health management training staff; consequently, Partnership work focussed on broadening and deepening training in health management education. For example, joint teams of Romanian and US specialists created case studies which take into account important issues of the health sector in Romania. In Slovakia, the Partnership also worked on advancing and refining health management education, including improvements in the management of institutions. A Center for Health Policy and Strategies was created at the University of Matej Bel in Bansk Bystrica, and a Center for Health Care Consultancy was established at the Health Management School in Bratislava. This School received support from PHARE funds and the equivalent of a \$10,000 US dollars grant from the OSF Foundation in Slovakia to develop a consulting service.

In general, CEE sites adapted new teaching techniques they had observed in the US to local conditions, implementing a more didactic process and multi-media presentation methods. Research practices also changed from an individualistic approach to a team form of cooperation ; several Partnerships indicated they had already or were in the process of working on joint publications. The Slovaks now publish the international *Journal of Health Management and Public Health*.

VII. INFORMATION FOR DECISION-MAKING

Access to information is an essential ingredient in the provision of quality care. Through the Partnership program, US Partners have made information available to health care professionals and policy makers in the NIS/CEE. AIHA supplemented these efforts through providing a broad scale information technology initiative to NIS/CEE institutions, establishing Learning Resource Centers and, in some cases, more specialized Nursing Learning Resource Centers. The goal of such Centers was to increase access to information and facilitate the application of information and technology to meet the day-to-day demands of health care personnel in the NIS and CEE.

Each Partnership had an opportunity to describe on the qualitative survey benefits accrued to them through their AIHA sponsored Learning Resource Center. In addition, three Partnerships in the NIS described developing resource centers on the quantitative survey. These three Partnerships are: Tbilisi State Medical University, and City Hospital No. 2 in Tbilisi, Georgia; St. Petersburg Medical University in the Name of Pavlov in St. Petersburg, Russia; and the Medical Center of St. Petersburg in the Name of Sokolov (formerly Hospital No. 122) in St. Petersburg, Russia. In this chapter, these three Partnership programs as well as the AIHA efforts will be described.

The structure for describing findings in this program area includes:

1. a description of the pre-existing conditions in the program area;
2. key inputs described in the self-assessments; and
3. typical and exemplary outputs described in the self-assessments.

(Outcomes in this program area are not included because they are not relevant. Programs which improved access to information were designed to improve clinical practice and support positive outcomes in other Partnership programs.)

1. Pre-Existing Conditions

Prior to the initiation of the Partnership program, health care professionals in the NIS and CEE had become isolated from each other and from access to current medical research. As a respondent from Donetsk described, when the central planning system came to an end, hospitals found they had less access to material, and the materials they did have were obsolete. Barriers included the high cost of medical literature, a lack of computer skills, and insufficient command of the English language. Many Partnerships had as one of their goals becoming connected to the Internet and establishing related services (e.g., electronic mail, home pages). As the respondent from the Regional Clinical Hospital in Lviv indicated, access to new technology would be a great benefit.

Taking into account current level of financing, it will be impossible to implement new technologies without some degree of support from AIHA, especially in the field of information.

2. Key Inputs

Inputs will be described in two areas: a) activities during exchange visits (using a broader definition of this term); and b) equipment, supplies and educational materials provided by the US partners and AIHA (the qualitative questionnaire did not require that respondents specify in detail the source of their key inputs).

a. Exchange Visits

In the three Partnerships which described the development of Learning Resource Centers on the quantitative survey, an average of 4 visits to the NIS sites were made by the US (a range from 3 to 6 visits); and an average of 3 visits to the United States were made by NIS Partnership representatives (a range from 2 to 5 visits) in this program area. Exchange visits to the US provided the opportunity for Partners from the NIS to become acquainted with different types of information systems; the Director of the National Information Center in Tbilisi, Georgia had an internship at the Emory Medical College Library. Visits by the US to the NIS sites were dedicated to providing technical assistance as these Partnerships began to implement new technologies.

All Partnerships were provided the opportunity to participate in annual regional workshops sponsored by AIHA for information coordinators (who staffed the Learning Resource Centers). These workshops (using a train the trainers format) taught information coordinators how to use the new technologies, how to facilitate the use of the new technologies by others, and how to manage their projects. They covered topics ranging from basic Internet training to the application of evidence-based medicine to analyze treatment options. AIHA also offered a seminar on health care management facilitated by the Association of University Programs in Health Administration (AUPHA). A mobile videoconferencing unit was made available by AIHA in some areas to support access to training activities.

b. Equipment, Supplies and Educational Materials

Partnerships were provided with the equipment they would need to create the infrastructure for the introduction of new information technologies. Typically this included: computers, printers, modems, associated software, copiers, fax machines, and, in some cases, servers. Access to Internet and e-mail accounts was sponsored for Partnerships, Internet service fees covered, and in some cases the service charge for installing and servicing phone lines was covered.

Partnerships were also provided with the reference materials and teaching aids they would require to utilize and maintain their new equipment. This included manuals on: software; the Internet; electronic mail; and developing databases. Many Partnerships were provided with a collection of medical and health related resources on compact disc, including the Cochrane Library for teaching physicians how to practice evidence based medicine. The reference books on major fields of medicine and selection of journals which many Partnerships received (as described in other sections) would typically be housed within the LRCs.

AIHA developed an on-line newsletter (*Connections*), a Partnership mailing list, and a web page with Partnership information to facilitate information sharing; AIHA reports and publications, including an on-line version of their journal *CommonHealth*, were also provided. As the respondent from the Medical Center of St. Petersburg in the Name of Sokolov described, through *CommonHealth* we get accurate updates on the course of health reforms in other NIS countries. Their experience assists us in solving our problems. AIHA has also worked to put native language health and medical resources on-line.

3. Typical and Exemplary Outputs

Outputs for learning resource centers were described in these four areas: a) organizational (management), b) financial, c) clinical, and d) community, region or country level changes. Typical and exemplary outputs in these four areas will be described in the sections below.

a. Organizational (Management) Outputs

The primary organizational output was the establishment of a Learning Resource Center at Partnership sites (this was called the National Information Learning Center in Tbilisi, Georgia). The Centers housed the equipment and staff member (information coordinator) who maintains the LRC and provides training and support for other personnel. As the respondent from Latvia described: now each of our hospitals in Partnerships have learning rooms with books and computer and information coordinator. Also we have a Nursing LRC which teaches nurses all over Latvia and even Estonia. ...We have libraries with Medline (OVID) and Internet, e-mail, CD education, over 20 state of art books and over 100 journals. The Minsk Medical Institute set up a LRC to be used for training medical staff from other Partnerships and for research on problems of new technology application to the conditions of the NIS ; they also created a printing center, which is the only one like it in Belarus. Their goal is to continue to improve this Center to enhance the dissemination of information across Belarus.

To staff LRCs, information coordinators were hired (at many sites these were volunteers); in some cases software managers were also hired (this was a new position in the Tbilisi Partnership, who also hired technical assistants as instructors). At the Medical Center of St. Petersburg in the Name of Sokolov, the job descriptions of administrative and educational department personnel were revised. The Deputy Chief of the department took on the responsibilities of the information coordinator with a physician consultant to serve as his/her assistant. St. Petersburg Medical University in the Name of Pavlov found it useful for LRC staff to develop a close collaboration with employees of the University library.

New reporting systems were developed to track the activities of the Learning Resource Centers. Information coordinators are required to submit monthly reports by e-mail which document activities including use of the Internet, and describes training/education efforts they conducted for other personnel. Information coordinators have surveyed staff at their institutions to assess the state of information access and to help identify barriers to the use of technology and information resources. They have helped staff in other departments develop uses for the new technology, such as new systems for managing patient records (e.g., a new patient tracking system using Diagnosis Related Groups; patient registration), pharmaceutical management, and hospital finances.

b. Financial Outputs

Some of the Partnerships indicated that they were beginning to develop new resources of revenue to sustain their Learning Resource Center activities after the completion of the AIHA program; these Partnerships were adapting their LRCs to become self supporting through charging use fees and setting up accounts for reimbursement. The Vladivostok Partnership received a ZdravReform grant which has been used to further the process of computerization in their LRC. The Partnership in Tbilisi, Georgia received two grants from the Soros Foundation: \$10,000 for office renovation and \$49,950 for developing an information network for the Georgian health sector. This Partnership has developed contracts with the Georgian Ministry of Health for carrying out searches of MEDLINE and other medical resources in the Internet; their Center has already satisfied ten orders placed by the Ministry (for the total sum of 270 US dollars). The contract for 1998 provides the Center with \$30,000 to cover the operational expenses and \$19,000 for implementing three programs: telemedicine/distance learning; information searches; and the creation of a Georgian health sector Web-page.

c. Clinical Outputs

The most significant output in the clinical area was the sustainable link to the growing network of medical information available through the Internet - a link that provides new opportunities for continuing medical education for physicians, nurses, and other staff . Physicians, nurses and researchers (including on-site and remote users) acquired skills to work with Medline, Cochrane and other biomedical databases, giving them the opportunity to receive the latest medical information - including information on evidence based medicine. The Partnership at St. Petersburg Medical University in the Name of Pavlov reported that before the Partnership started, the number of searches for data through Medline was 10-15 a year; in 1997 the number of searches was 9,000.

As the Partnership at the Medical Center of St. Petersburg in the Name of Sokolov indicated, the knowledge and skills which were incorporated in day-to-day practices allowed us to increase the productivity and efficiency of our work. The Partnership in Tbilisi, Georgia, reported: we received updates on the recent clinical advances in managing several diseases. ...We have received new protocols on managing cardiac insufficiency, ischemic heart disease, echinococcosis, and acute pancreatitis . This Partnership also assisted eight patients who needed treatment abroad in finding the appropriate clinics and contacted them by e-mail. The Regional Clinical Hospital in Lviv stated that their Learning Resource Center provided us with a possibility to implement the program of neonatal resuscitation at all obstetrics hospitals of the region and improve the level of neonatal medical care.

The Internet gave Partners access to on-line chat conferences, e-mail teleconsultations, and is a resource for sustaining the professional collaboration with US Partners. The Kosice Learning Resource Center was also used to organize health education events for patient s parents and mothers in the Department of Pathological Gravidity. In Bosnia, the Learning Resource Center includes an English Language Center , opened in collaboration with Buffalo University in 1996, which offers daily English lessons, helping to eliminate a barrier to full access of Internet resources.

d. Community, Region or Country Level Outputs

The three Partnerships which described the development of Learning Resource Centers on the quantitative survey reported changes in the region and country level as a result of Learning Resource Center activities. The respondent from the National Information Learning Center (NILC), in Tbilisi, Georgia indicated that work has been launched on establishing regional Learning Resource Centers, and that the Georgian Ministry of Health has developed a two year federal program on information technologies and telemedicine. St. Petersburg Medical University in the Name of Pavlov reported that University proposals on strategy of information technologies

development were submitted to the Ministry of Health of the Russian Federation. The National Association for Introduction of informational standards to health care systems was created, and the national committee *Information Technologies in Health Care* at the GOSSTANDART of Russia was created. This Committee is an official representative of Russia to the European Committee for medical informatics.

Many Partnerships described improvements in community, regional or national information exchange as a result of Learning Resource Center activities. All described increased information exchange through the Internet; some Partnerships had created web pages and/or electronic bulletins which provide overviews of medical and Partnership news. For example, the Vladivostok Learning Resource Center created: an electronic library index; a Partnership Web homepage called Vladmed ; and a bookmarks page of the Internet medical and health resources, which now includes links to around 90 Web-sites in Russian and in English. The Tbilisi Partnership, through their NILC, has provided access to the Internet and e-mail services via remote network connections to many health care institutions and organizations, including: the National Health Management Center, the Emergency Medical Service Training Center; the Analytical Center of the Ministry of Health, Tbilisi State Medical University, and the AIDS and Clinical Immunology Center. In the course of the Soros Foundation grant implementation the NILC has donated computers with modems and printers to five regional health care departments: Tbilisi, Gori, Batumi, Zugdidi and Ozurgeti. After receiving an Aeronet radiomodem in January 1998, the NILC became the first to test an alternative method of radiomodem connection with an Internet provider. This allowed them to increase the data transfer rate, and eliminated the necessity for using government-monopolized cable connections which sometimes could even have a political effect.

APPENDIX A

Appendix A

Country, City	US City, State Partners	NIS/CEE Partner Hospitals	Programs Assessed
Armenia, Yerevan	Boston, MA Boston University School of Medicine, Boston Medical Center	Emergency Scientific Medical Center	EMS, nursing, infection control
Armenia, Yerevan	Los Angeles, CA University of California at Los Angeles Medical Center	Erebuni Medical Center, Erebuni College of Nursing	infection control nursing, women's health
Belarus, Minsk	Pittsburgh, PA Magee-Women's Hospital, University of Pittsburgh Medical School	Children's Hospital No. 4, Radiation Medical Institute, Minsk Medical Institute, Maternity Hospital No. 2	medical education
Georgia, Tbilisi	Atlanta, GA Grady Health System, Emory University School of Medicine	Tbilisi City Hospital No. 2, Tbilisi State Medical University	EMS, nursing, learning center
Kazakstan, Almaty	Tucson, AZ Tucson/Almaty Health Care Coalition of Eight Hospitals	Kazak Scientific Research Center of Pediatrics and Children's Surgery, Almaty First Aid Hospital	nursing, infection control toxicology
Kazakstan, Semipalatinsk	Houston, TX The Methodist Hospital, Baylor College of Medicine, General Board of Global Ministries of the United Methodist Church	Oblast Clinical Hospital, Oblast Children's Hospital, Emergency First Aid Hospital, Inter-Oblast Oncology Dispensary, Semipalatinsk Gynecology Center Zhamilya and Kurchatov Diagnostic Center	nursing, disaster medicine, cancer registry
Kyrgyzstan, Bishkek	Kansas City, KS University of Kansas Medical Center	Institute of Obstetrics and Pediatrics, Institute of Oncology and Radiology	nursing, neonatal, burn victims
Moldova, Chisinau	Minneapolis, MN Hennepin County Medical Center, Abbott Northwest Hospital	Republican Clinical Hospital, City Ambulance Center, Moldova Medical University, Dalila Women's Wellness Center	EMS, EMS training
Russia, Moscow	Boston, MA Brigham & Women's Hospital	Pirogov First Municipal Hospital	nursing, infection control management
Russia, Moscow	Pittsburgh, PA Magee-Women's Hospital	Savior's Hospital for Peace and Charity	women's health, birth prep.
Russia, Moscow	Chicago, IL Premier	Central Clinical Hospital	nursing, cardiology, management
Russia, Moscow	Norfolk, VA Children's Hospital of the King's Daughters	Russian Federation Ministry of Health, Institute of Pediatrics and Children's Surgery, Children's Hospital No. 13	neonatal resuscitation
Russia, Moscow	Austin, TX City of Austin/Travis County Emergency Medical Services	Moscow Institute of Continuing Education of the Federal Admin. of Biomedical Problems and Disaster Medicine, Russian Federation, Moscow Oblast Ministries of Health	EMS
Russia, St. Petersburg	Atlanta, GA Georgia Baptist Healthcare System	St. Petersburg Medical University in the Name of Pavlov	learning center, ophthalmology, urology
Russia, St. Petersburg	Louisville, KY Jewish Hospital Healthcare Services, University of Louisville School of Medicine	Medical Center of St. Petersburg in the Name of Sokolov (formerly Hospital No. 122)	learning center, management

Appendix A

Country, City	US City, State Partners	NIS/CEE Partner Hospitals	Programs Assessed
Russia, Murmansk	Jacksonville, FL Jacksonville Sister Cities Association & Jacksonville Community Hospitals	Murmansk Regional Hospital, City Ambulance Hospital	infection control cardiovascular, laparoscopy
Russia, Dubna	LaCrosse, WI Gundersen/Lutheran Health System, St. Francis Hospital	Hospital No. 9, Central City Hospital and Bolshaya Volga Hospital	diabetes, orthotics, alcoholism
Russia, Vladivostok	Richmond, VA Medical College of Virginia, Virginia Commonwealth University	City Clinical Hospital No. 2, Vladivostok Medical Institute	EMS, infection control, nursing, management
Russia, Stavropol	Des Moines, IA Iowa Hospital Association	Stavropol Regional Hospital, City Hospital No. 4, Stavropol Krai Health Administration	nursing, infection control family planning
Tajikistan, Dushanbe	Boulder, CO Boulder Community Hospital	City Medical Center	nursing, infection control neonatology
Turkmenistan, Ashgabat	Cleveland, OH Cleveland Clinic Foundation	Medical Consultative Center in the Name of President Niyazov	nursing, dialysis
Turkmenistan, Ashgabat	Richmond, VA Richmond Ambulance Authority	Tiz Komek Medical Center	EMS
Ukraine, Donetsk	Orlando, FL Orlando Regional Healthcare System	Donetsk Oblast Trauma Hospital	EMS, infection control, orthopedics
Ukraine, Kiev	Philadelphia, PA Children's Hospital of Philadelphia, University of Pennsylvania Medical School, the Hospital of the University of Pennsylvania	Center for Maternal and Child Health Care of the Left Bank	infection control perinatal care, family planning
Ukraine, Kiev	Brooklyn, NY Coney Island Hospital, New York City Fire Department	Ministry of Health and Emergency and Disaster Medical Training Center	EMS
Ukraine, L'viv	Buffalo, NY Millard Fillmore Health System, Buffalo School of Medicine, Biomedical Sciences	L'viv Railway Hospital, L'viv Perinatal Center	neonatal resus, infection control nursing, endoscopy
Ukraine, L'viv	Detroit, MI Henry Ford Health System	L'viv Oblast Clinical Hospital, L'viv Medical Institute	neonatal, urology, rheumatology
Ukraine, Odessa	Brooklyn, NY Coney Island Hospital	Odessa Oblast Hospital	neonatal, nursing, infection control
Uzbekistan, Tashkent	Chicago, IL University of Illinois at Chicago Medical Center	Second State Medical Institute	nursing, neonatal, women's health
Albania, Tirana	New York, NY New York University	University of Tirana, Albanian Ministry of Health and Environmental Protection	health management education

Appendix A

Country, City	US City, State Partners	NIS/CEE Partner Hospitals	Programs Assessed
Czech Republic, Bohemia	Las Vegas, NV University of Nevada, Las Vegas, College of Health Care Administration	South Bohemian University (Ceske Budejovice, Jindrichuv Hradec), Institute of Postgraduate Education in Health Care (Prague), University of Education (Hradec Kralove), Purkyne Military Medical Academy (Hradec Kralova)	health management education
Czech Republic, Olomouc	Richmond, VA Virginia Commonwealth University, Department of Health Administration	Palacky University	health management education
Romania, Bucharest	Chicago, IL Institute of Health Services Management, University of Chicago	University of Medicine and Pharmacy "Carol Davila"	health management education
Slovak Republic	Scranton, PA University of Scranton	Trnava University, University of Matej Bel (Banska Bystrica), Health Management School (Bratislava)	health management education
Slovak Republic, Martin	Cleveland, OH The MetroHealth System	The cities of Martin and Banska Bystrica	Community Health/Healthy Communities
Slovak Republic, Tuzianske Teplice	Cleveland, OH The MetroHealth System	Turcianske Teplice Town Health Council	Community Health/Healthy Communities
Slovak Republic, Petralka	Kansas City, MO Truman Medical Center	Association of Aid to Children at Risk	Community Health/Healthy Communities
Albania, Tirana	Grand Rapids, MI Butterworth Hospital	University Hospital Center "Mother Theresa," University Maternity Hospital, Central Trauma Hospital	infection control neonatal, management
Bosnia & Herzegovina, Tuzla	Buffalo, NY Buffalo General Health System	University Clinical Center of Tuzla	ob/gyn, nursing
Croatia, Zadar	KY, NY, NJ, OH, SC Franciscan Sisters of the Poor Health System, Inc.	Zadar General Hospital, Orthopedic Hospital of Biograd	infection control oncology, orthopedics, PTSD
Croatia, Zagreb	Lebanon, NH Dartmouth-Hitchcock Medical Center	Sveti Duh General Hospital, University Hospital of Infectious Disease, Children's Hospital for Respiratory Diseases	management, asthma, tuberculosis
Hungary, V c	Winston-Salem, NC NovantHealth	J vorszky d n (V c Municipal) Hospital	home care, oncology, diabetes
Latvia, Riga	St. Louis, MO Barnes-Jewish Hospital, BJC Health System, Inc., Washington University Medical School	Bikur Holim, City Maternity Hospital, Republic Children's Hospital	hospice, ped. infectious disease, health promotion
Romania, Cluj	Philadelphia, PA Thomas Jefferson University	University Hospital in Cluj, The Center for Medical Research, Sanitary Police	occupational medicine
Slovakia, Kosice	Providence, RI Women & Infants Hospital of Rhode Island, Hasbro Children's Hospital	Faculty Hospital and Polyclinic	pediatrics, obstetrics, neonatal

APPENDIX B

AIHA

PARTNERSHIP SELF-ASSESSMENT PROCESS

EVALUATION FRAMEWORK

I. INTRODUCTION:

This framework is being provided to enable the NIS/CEE Partnerships to conduct a self-assessment of their programs. This evaluation allows Partnerships to determine if their programs were implemented as planned, to document results, and to make changes based on this information. The goal is to leave in place the capability for self-assessment by the NIS/CEE partners when the partnerships end. An evaluation also provides information which can serve to guide future policy efforts in the United States.

In assessing the impact of the Partnership programs our focus is first on the hospital (organization), and second on the larger community, region or country. Many of the programs in the respective Partnership workplans may have different degrees of impact on the hospital (organization) and the community, region or country. It is the intent of the following approach to document this impact.

A comprehensive evaluation includes quantitative (objective) and qualitative (subjective) components; these components are described in detail below.

II. QUANTITATIVE ASSESSMENT (Objective)

A. Definitions: the format for the quantitative evaluation is provided below, including documentation of: *input*, *output*, and *outcome/results*. This format will be used to quantify the impact of Partnership programs in three areas within the hospital: organizational (management), financial, and clinical; as well as the impact of Partnership programs on the community, region or country.

1. *Input*

These are the resources which are committed/provided as part of the Partnership program. Examples of input include: time committed through site visits to partner hospitals; equipment and supplies provided; workshops and seminars offered; and materials/information disseminated to professionals to improve the management practices, financing structure, and/or clinical care in their hospital and, potentially, within similar institutions throughout the region or country.

2. *Output*

Outputs are the direct products of the programs, the system modifications and activities which can be directly linked to input variables. Output refers to intermediate outcomes designed to contribute to the achievement of the ultimate goals of the partnership (final outcome/results). **Examples** of output for each area to be assessed are presented below.

- a. Organizational (Management)
 - Organization of a new committee to monitor infection control; and
 - Development of new physician/nurse teams.

- b. Financial
 - Initiation of concurrent budget review;
 - Development of a shared purchasing program; and
 - Creation of pharmacy control.
- c. Clinical
 - Initiation of patient protocols;
 - Implementation of a new nurse (physician) training program; and
 - Introduction of new technology.
- d. Community, Region or Country
 - Development of a national credentialing system; and
 - Development of national guidelines for infection control.

Output may include benefits which have not been measured, such as changes in attitudes and behaviors. There will be an opportunity to describe these types of benefits in the qualitative part of the evaluation.

3. *Outcomes/Results*

Outcome/results refers to the ultimate impact of inputs and outputs combined.

Outcomes/results must be measurable and linked to inputs and outputs that can be directly attributable to the partnership. To truly determine impact, baseline data are needed (data documenting the status of the system prior to Partnership activities) against which the results of Partnership programs can be compared. **Examples** of outcomes/results for each area to be assessed are presented below.

- a. Organizational (Management)
 - A measurable increase in staff efficiency; and
 - Reduced length of stay.
- b. Financial
 - Identification of cost savings;
 - Elimination of institutional deficit; and
 - Creation of a new capital fund.
- c. Clinical
 - Reduced nosocomial infection rate; and
 - Reduced post surgical complications.
- d. Community, Region or Country
 - Improved health status in the community; and
 - Regional decrease in accident-related deaths.

An example incorporating all three dimensions is provided for further clarification.

Example: a seminar sponsored by the US partners on infection control (input), led to the reorganization of the NIS/CEE partners infection control review committee (output), which ultimately contributed to a reduced infection rate (outcome/result).

- B. Approach: to complete the quantitative assessment, each Partnership should **select three of their key programs** and indicate the inputs, outputs and outcomes/results (if possible) which are associated with that program. It is understood that not all Partnerships will be able to document clinical outcomes. **Examples** of program areas include: infection control; emergency medical services; and the organization of perinatal health services.

Questions are provided in the enclosed packets to help you identify the inputs, outputs and outcomes/results. This process is designed to document the impact of each program in the organizational (management), financial, and clinical areas; as well as the impact of the Partnership program on the community, region or country.

Three sets of quantitative questions are provided, one set for each of the three program areas you are choosing to review. You may ask the person who is most familiar with the program area to complete the set of questions, or complete them yourself (in consultation with your colleagues) if you prefer.

III. QUALITATIVE ASSESSMENT (Subjective)

- A. Definition: a qualitative assessment is subjective and allows for greater description of the partnership successes, limitations, and difficulties. The Partnership can also use this type of assessment to describe aspects of their activities which may not have been quantified (provide anecdotal evidence), such as changes in attitude.
- B. Approach: the qualitative assessment is of **the entire Partnership** (not just certain program areas). To complete this assessment, we have developed a set of questions which are meant to give some structure to the partners in describing the achievements of the entire Partnership as well as barriers they may have encountered during implementation.

It is recommended that this set of questions be completed by the person who is most familiar with the activities of the entire Partnership.

QUALITATIVE QUESTIONS

Partnership Name: _____

Person Completing Form: _____

Position: _____ Phone #: _____

1. Was the Partnership able to address a major health problem in your institution or community? (check either yes or no) ☐ yes ☐ no

If no, what barriers (e.g., policy issues at a higher level, problems in communication) prevented the Partnership from addressing a major health problem in your institution or community? (Describe, then proceed to question #2)

If yes, what was the major health problem?

If yes, identify the specific programs/activities which addressed the problem.

If yes, in what manner did these programs respond to the problems identified by your institution or community?

If yes, what barriers, if any (e.g., policy issues at a higher level, problems in communication), prevented greater progress in addressing the major health problem? Were there limitations in funding, personnel, technology, etc. which prevented implementation of specific practices learned through the Partnership? (Please describe)

2. In your opinion, did exposure to the US system of healthcare and practices within your US partner institutions help transform attitudes and practice within the NIS/CEE partner institution? (check either yes or no) ☐ yes ☐ no

If no, what barriers prevented the Partnership from helping to transform attitudes and practice within the NIS/CEE partner institution? (Describe, then proceed to question #3)

If yes, what changes did you observe in attitudes and practice?

If yes, identify the specific activities/programs which helped to transform attitudes and practice.

If yes, how did these activities/programs help to transform attitudes and practice?

If yes, what barriers, if any, prevented greater progress in transforming attitudes and practice?

3. Was it more effective to visit the US institution or was it more effective to have US professionals visit your site? Please select one then explain your answer.

☐ visit the US ☐ have the US visit NIS/CEE partner

Explanation:

- 4a. In your opinion, did exposure of US professionals to NIS/CEE partner institutions effect their approach to their work in the US? (check either yes or no) ☐ yes ☐ no

If no, what do you think prevented this exposure from having any effect? (Describe, then proceed to question #4b.)

If yes, in what manner did this exposure have an effect? (Identify some specific examples).

- 4b. In your opinion, did the partnership encourage changes in the outlook of the US delegates toward their health care delivery system? (check yes or no) ☐ yes ☐ no

If yes, what changes in outlook occurred?

- 5a. Could the US partner improve the level and form of assistance provided to the NIS/CEE partner? (check either yes or no) ☐ yes ☐ no

If yes, what improvements would you recommend?

- 5b. Please describe any suggestions you have for how AIHA might improve the working relationships between the US and their NIS/CEE Partners.

6. Will program areas in the partnership (improvements made) be able to be sustained when funding ends? (check either yes or no) ☐ yes ☐ no

If no, what prevents their continued existence? (Describe, then proceed to question #7)

If yes, what programs will continue?

If yes, how will they be sustained?

If yes, what programs may not be continued?

If yes, what prevents their continued existence?

7. Will the Partnership **relationship** be able to be sustained when funding ends? (check either yes or no) ☐ yes ☐ no

If no, what prevents the continuation of this relationship? (Describe, then proceed to question #8)

If yes, to what degree will the relationship continue? (describe any differences)

If yes, how will you accomplish this - what means will you use to sustain the relationship?

- 8a. Please describe the benefits you have received as a result of participating in AIHA conferences, meetings, workshops and/or study tours.

- 8b. How might these AIHA conferences, meetings, workshops and/or study tours be improved?

9a. Did your Partnership form any relationships with other Partnerships? ☐ yes ☐ no

If no, what prevented you from forming relationships with other Partnerships? (Please describe then proceed to question #9b.)

If yes, what other Partnerships does your Partnership communicate with most frequently?

If yes, what benefits did your Partnership receive (e.g., lessons learned from other Partnership s experiences) through your relationships with other Partnerships? Please be specific.

9b. Please describe any suggestions you have for how AIHA might improve relationships between Partnerships.

10a. Please describe the benefits you have received as a result of access to new technology (e.g., the Internet) or information resources (e.g., *CommonHealth*) introduced by AIHA.

10b. How might AIHA improve the process of providing access to new technology and information?

11. Did Partnership and/or AIHA activities lead to improvements in existing

information Resource Centers or the development of new Learning Resource Centers? (check either yes or no) ☐ yes ☐ no

If no, what prevented the improvement in/development of Learning Resource Centers?

If yes, please describe the improvements in the existing Resource Center(s) or the type of new Learning Resource Center.

If yes, please describe the benefits you have received as a result of access to these Learning Resource Centers.

12. Please provide any other comments related to the Partnership which have not been covered by the other qualitative questions.

QUANTITATIVE QUESTIONS

Partnership Name: _____

Person Completing Form: _____

Position: _____ Phone #: _____

Program Area # : _____

Brief Description of Program Area: _____

INPUTS

1. What was the total number of site visits directed at this program area:

in the NIS/CEE: _____ in the US: _____

2. How many participants focused on this program area:

from the NIS/CEE: _____ from the US: _____

3. What major equipment and/or category of supplies were provided by the US partners to assist in this program area?

Please list:

4. What categories of educational or other materials were provided by the US partners to assist in this program area? Please list and describe these materials within the chart below, indicating if the materials were newly developed for the program and the number and type of person (if known) the materials were distributed to (e.g., to 25 nurses, 10 managers).

Name/Description of Materials Provided	Newly Developed (yes or no)	Number Distributed and Type of Recipient
1.		
2.		
3.		
4.		
5.		
6.		
7.		

5. What seminars/workshops were provided **in the NIS/CEE** to assist in this program area?
Please list and describe the content of these seminars/workshops within the chart below, indicating the number and type of participants (e.g., 20 physicians, 10 managers).

Name/Content of Seminars/Workshops Provided	Number and Type of Participant
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

6. What seminars/workshops were provided **in the US** to assist in this program area?
Please list and describe the content of these seminars/workshops within the chart below, indicating the number and type of participants (e.g., 20 physicians, 10 managers).

Name/Content of Seminars/Workshops Provided	Number and Type of Participant
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

7. Please list below any inputs/resources which were **provided by AIHA** in this program area (e.g., communication equipment, seminars).
8. Please list below any other inputs/resources which were provided in this program area, which have not already been described in your previous responses.

OUTPUTS

A. Organizational (Management) Changes

1. Have there been specific changes in the organizational structure of the Department (Hospital) as a result of this program area (e.g., changes in admission policy, by-laws, any new committee structure that resulted from the presence of the Partnership)? Please check:

_____ yes or _____ no

If yes, please identify these specific changes.

2. Have there been any changes in the responsibility structure that clarified organizational relationships, any changes that may have occurred in the structure of staff relationships?

_____ yes or _____ no

If yes, please identify these specific changes.

3. Have there been any specific instances of the development/revision of job descriptions?

_____ yes or _____ no

If yes, please identify these specific instances.

OUTPUTS (continued)*A. Organizational (Management) Changes (continued)*

4. Have any personnel policies changed as a result of the Partnership?

_____ yes or _____ no

If yes, please identify these changes.

5. Are there any changes in the medical staff organization as a result of this program area?

_____ yes or _____ no

If yes, please describe these changes.

6. Please describe any further examples of organizational/management changes not already noted above.

OUTPUTS (continued)*B. Financial Changes*

1. Were any new budget models introduced by the Partnership in this program area?

_____ yes or _____ no

If yes, please describe these models.

2. Have there been any changes in the financial monitoring system as a result of Partnership activities in this program area?

_____ yes or _____ no

If yes, please describe these changes.

3. Have there been any specific changes in budget operation or budget control in this program area?

_____ yes or _____ no

If yes, please describe these changes.

OUTPUTS (continued)*B. Financial Changes (continued)*

4. Have there been any changes in purchasing programs (new programs or revisions) in this program area?

_____ yes or _____ no

If yes, please describe these changes.

5. Please describe any further examples of financial changes not already noted above.

OUTPUTS (continued)*C. Clinical Changes*

1. Have any new technologies been introduced into the Department (Hospital) in this program area?

_____ yes or _____ no

If yes, please describe these new technologies.

2. Have there been any improvements in technical skills resulting from Partnership activities in this program area?

_____ yes or _____ no

If yes, please describe these improvements.

3. Have there been any changes in clinical care (physicians and/or nurses) resulting from Partnership activities in this program area?

_____ yes or _____ no

If yes, please describe these changes.

OUTPUTS (continued)*C. Clinical Changes (continued)*

4. Have there been any changes in physician/patient or nurse/patient interaction resulting from Partnership activities in this program area?

_____ yes or _____ no

If yes, please describe these changes.

5. Have any clinical oversight committees been organized as a result of the Partnership activities in this program area?

_____ yes or _____ no

If yes, please describe the function of these committees.

6. Have any new or revised patient protocols been developed as a result of Partnership activities in this program area?

_____ yes or _____ no

If yes, please describe the revisions or newly developed protocols.

OUTPUTS (continued)*C. Clinical Changes (continued)*

7. Have any new patient flow mechanisms been developed as a result of the Partnership activities in this program area?

_____ yes or _____ no

If yes, please describe the changes in patient flow mechanisms.

8. Have there been any improvements in record-keeping and/or information gathering that resulted from Partnership activities in this program area?

_____ yes or _____ no

If yes, please describe these improvements.

9. Have any new reports been developed as a result of these changes in the clinical area?

_____ yes or _____ no

If yes, please describe these reports.

10. Please describe any further examples of clinical changes in this program area not already noted above.

OUTPUTS (continued)

D. Community, Region or Country Level Changes

1. Have there been any new regional or national policies or legislation concerning clinical care that resulted from Partnership activities in this program area?

_____ yes or _____ no

If yes, please describe the new policies and/or legislation.

2. Have there been any new regional or national policies or legislation concerning credentialing/certification of personnel or licensing of facilities that resulted from Partnership activities in this program area?

_____ yes or _____ no

If yes, please describe the new policies and/or legislation.

3. Have there been any improvements in community, regional or national information exchange (e.g., a new medical Journal, founding of a national Nurse s Association) that resulted from Partnership activities in this program area?

_____ yes or _____ no

If yes, please describe these improvements.

4. Please describe any further examples of community, region or country level changes in this program area not already noted above.

OUTCOMES/RESULTS

A. Organizational (Management) Outcomes/Results

1. Is there evidence of a measurable increase in the quality of care (patient satisfaction) related to Partnership inputs and outputs in the organization (management) area?

_____ yes or _____ no

If yes, please describe the change, briefly note the inputs/outputs to which you attribute this change, and the source of your evidence.

2. Is there evidence of a measurable increase in staff efficiency related to Partnership inputs and outputs in the organization (management) area?

_____ yes or _____ no

If yes, please describe the change, briefly note the inputs/outputs to which you attribute this change, and the source of your evidence.

OUTCOMES/RESULTS

A. Organizational (Management) Outcomes/Results (continued)

3. Is there evidence of a measurable decrease in patient length of stay related to Partnership inputs and outputs in the organization (management) area?

_____ yes or _____ no

If yes, please describe the change, briefly note the inputs/outputs to which you attribute this change, and the source of your evidence.

4. Please describe and provide evidence of any other measurable outcomes/results related to Partnership inputs and outputs in the organization (management) area.

OUTCOMES/RESULTS (continued)*B. Financial Systems Outcomes/Results*

1. Is there evidence of cost savings in a particular Department or Hospital wide related to Partnership inputs and outputs in the financial area?

_____ yes or _____ no

If yes, please describe the savings, briefly note the inputs/outputs to which you attribute this change, and the source of your evidence.

2. Is there evidence of new sources of revenue related to Partnership inputs and outputs in the financial area?

_____ yes or _____ no

If yes, please describe the new revenue, briefly note the inputs/outputs to which you attribute this change, and the source of your evidence.

OUTCOMES/RESULTS (continued)*B. Financial Systems Outcomes/Results (continued)*

3. Is there evidence of reduced deficit related to Partnership inputs and outputs in the financial area?

_____ yes or _____ no

If yes, please describe the reduction, briefly note the inputs/outputs to which you attribute this change, and the source of your evidence.

4. Please describe and provide evidence of any other measurable outcomes/results related to Partnership inputs and outputs in the financial area.

OUTCOMES/RESULTS (continued)*C. Clinical Systems Outcomes/Results*

1. Is there evidence of a measurable increase in technical skills related to Partnership inputs and outputs in the clinical area?

_____ yes or _____ no

If yes, please describe the change, briefly note the inputs/outputs to which you attribute this change, and the source of your evidence.

2. Is there evidence of a measurable increase in the quality of clinical care related to Partnership inputs and outputs (e.g., the introduction of new technologies, physician/nurse training, new patient flow mechanisms) in the clinical area?

_____ yes or _____ no

If yes, please describe the change, briefly note the inputs/outputs to which you attribute this change, and the source of your evidence.

OUTCOMES/RESULTS (continued)*C. Clinical Systems Outcomes/Results (continued)*

3. Please describe and provide evidence of any other measurable outcomes/results related to Partnership inputs and outputs in the clinical area.

OUTCOMES/RESULTS (continued)*D. Community, Region or Country Level Outcomes/Results*

1. Is there evidence of a measurable increase in the health status of the community or region related to Partnership programs in this area (e.g., reduction in regional perinatal mortality and morbidity; regional decrease in accident-related deaths)?

_____ yes or _____ no

If yes, please describe the change, briefly note the inputs/outputs to which you attribute this change, and the source of your evidence.

2. Please describe and provide evidence of any other measurable outcomes/results evident on the community, region or country level related to Partnership activities.

APPENDIX C

AIHA
PARTNERSHIP SELF-ASSESSMENT PROCESS
EVALUATION FRAMEWORK
HEALTHY COMMUNITIES/COMMUNITY HEALTH

I. INTRODUCTION:

This framework is being provided to enable the CEE Healthy Communities/Community Health Partnerships to conduct a self-assessment of their activities. This evaluation allows Partnerships to determine if their activities were implemented as planned, to document results, and to make changes based on this information. The goal is to leave in place the capability for self-assessment by the CEE partners when the partnerships end. An evaluation also provides information which can serve to guide future policy efforts in the United States.

In assessing the Partnership, the focus is first on the activities of the Partnership and second on the impact of these activities on the larger community, region or country. Many of the activities in the respective Partnership workplans may have different degrees of impact on the community, region or country. Further, it is understood that the ultimate impact of Partnership activities on the community, region or country may not be evident for several years. It is the intent of the following approach to document what is currently known about Partnership activities and their impact.

A comprehensive evaluation includes quantitative (objective) and qualitative (subjective) components; these components are described in detail below.

II. QUANTITATIVE ASSESSMENT (Objective)

A. Definitions: the format for the quantitative evaluation is provided below, including documentation of: *input*, *output*, and *outcome/results*. This format will be used to quantify the impact of Partnership activities within the community, region or country.

1. *Input*

These are the resources which are committed/provided as part of the Partnership program. Examples of input include: time committed through site visits to Partner institutions/organizations; equipment and supplies provided; workshops and seminars offered; and materials/information disseminated to individuals to develop/expand their ability to improve community health.

2. *Output*

Outputs are the direct products of the input resources; outputs can be directly linked to input variables. Output refers to intermediate outcomes designed to contribute to the achievement of the ultimate goals of the Partnership (final outcome/results).

Examples of output are presented below.

- Formation of a community based coalition;
- Administration and analysis of a community health assessment;
- Development of a community (or national) plan for health promotion and delivery system changes; and
- Implementation of strategies designed to improve community (or national) health.

Output may include benefits which have not been measured, such as changes in attitudes and behaviors. There will be an opportunity to describe these types of benefits in the qualitative part of the evaluation.

3. *Outcomes/Results*

Outcome/results refers to the ultimate impact of inputs and outputs combined. Outcomes/results must be measurable and linked to inputs and outputs that can be directly attributable to the Partnership. To truly determine impact, baseline data are needed (data documenting the status of the system/community prior to Partnership activities) against which the results of Partnership activities can be compared. **Examples** of outcomes/results are presented below.

- Decrease in the prevalence of adolescent drug use within the community;
- Decrease in smoking billboards and other advertisements near schools; and
- Decrease in the use of hospital care/increase in the use of home care and hospice care by the elderly and chronically ill.

- B. Approach: to complete the quantitative assessment, questions are provided in the enclosed packet to help you identify the inputs, outputs and outcomes/results. It is understood that not all Partnerships will be able to document outcomes/results.

The person who is most familiar with the Partnership's activities should complete the set of quantitative questions.

III. QUALITATIVE ASSESSMENT (Subjective)

- A. Definition: a qualitative assessment is subjective and allows for greater description of the partnership successes, limitations, and difficulties. The Partnership can also use this type of assessment to describe aspects of their activities which may not have been quantified (provide anecdotal evidence), such as changes in attitude.
- B. Approach: the qualitative assessment is of **the entire Partnership** (not just certain activities). To complete this assessment, we have developed a set of questions which are meant to give some structure to the Partners in describing the achievements of the entire Partnership as well as barriers they may have encountered during implementation.

It is recommended that this set of questions be completed by the person who is most familiar with the activities of the entire Partnership.

QUALITATIVE QUESTIONS
HEALTHY COMMUNITIES/COMMUNITY HEALTH

Partnership Name: _____

Person Completing Form: _____

Position: _____ Phone #: _____

1. Was the Partnership able to address a major health issue in your community? (check either yes or no) _____ yes _____ no

If no, what barriers (e.g., policy issues at a higher level, problems in communication) prevented the Partnership from addressing a major health issue in your community? (Describe, then proceed to question #2)

If yes, what was (were) the major health issue(s)?

If yes, were you satisfied with the progress made in addressing these health issues? (Please explain either why you were or were not satisfied.)

If yes, what barriers, if any (e.g., policy issues at a higher level, problems in communication), prevented greater progress in addressing the major health issue(s)? Were there limitations in funding, personnel, training, etc. which prevented implementation of specific practices learned through the Partnership? (Please describe)

2. In your opinion, did exposure to the US system of health promotion and practices within your US partner institutions help transform attitudes and practice within the CEE partner institution and community? (check either yes or no) ____ yes ____ no

If no, what barriers prevented the Partnership from helping to transform attitudes and practice within the CEE partner institution and community? (Describe, then proceed to question #3)

If yes, what changes did you observe in attitudes and practice?

If yes, identify the specific activities/programs which helped to transform attitudes and practice.

If yes, how did these activities/programs help to transform attitudes and practice?

If yes, what barriers, if any, prevented greater progress in transforming attitudes and practice?

3. Was it more effective to visit the US institution or was it more effective to have US professionals visit your site? Please select one then explain your answer.

☐ visit the US ☐ have the US visit CEE partner

Explanation:

- 4a. In your opinion, did exposure of US professionals to CEE partner institutions effect their approach to their work in the US? (check either yes or no) ☐ yes ☐ no

If no, what do you think prevented this exposure from having any effect? (Describe, then proceed to question #4b.)

If yes, in what manner did this exposure have an effect? (Identify some specific examples).

4b. In your opinion, did the partnership encourage changes in the outlook of the US delegates toward their system of health promotion? (check yes or no) ____ yes ____ no

If yes, what changes in outlook occurred?

5a. Could the US partner improve the level and form of assistance provided to the CEE partner? (check either yes or no) ____ yes ____ no

If yes, what improvements would you recommend?

5b. Please describe any suggestions you have for how AIHA might improve the working relationships between the US and their CEE Partners.

6. Will program areas in the partnership (improvements made) be able to be sustained when funding ends? (check either yes or no) ☐ yes ☐ no

If no, what prevents their continued existence? (Describe, then proceed to question #7)

If yes, what programs will continue?

If yes, how will they be sustained?

If yes, what programs may not be continued?

If yes, what prevents their continued existence?

7. Will the Partnership **relationship** be able to be sustained when funding ends? (check either yes or no) ☐ yes ☐ no

If no, what prevents the continuation of this relationship? (Describe, then proceed to question #8)

If yes, to what degree will the relationship continue? (describe any differences)

If yes, how will you accomplish this - what means will you use to sustain the relationship?

- 8a. Please describe the benefits you have received as a result of participating in AIHA conferences, meetings, workshops and/or study tours.

- 8b. How might these AIHA conferences, meetings, workshops and/or study tours be improved?

9a. Did your Partnership form any relationships with other Partnerships? ☐ yes ☐ no

If no, what prevented you from forming relationships with other Partnerships? (Please describe then proceed to question #9b.)

If yes, what other Partnerships does your Partnership communicate with most frequently?

If yes, what benefits did your Partnership receive (e.g., lessons learned from other Partnership s experiences) through your relationships with other Partnerships? Please be specific.

9b. Please describe any suggestions you have for how AIHA might improve relationships between Partnerships.

10a. Please describe the benefits you have received as a result of access to new technology (e.g., the Internet) or information resources (e.g., *CommonHealth*) introduced by AIHA.

10b. How might AIHA improve the process of providing access to new technology and information?

11. Did Partnership and/or AIHA activities lead to improvements in existing

information Resource Centers or the development of new Learning Resource Centers? (check either yes or no) ☐ yes ☐ no

If no, what prevented the improvement in/development of Learning Resource Centers?

If yes, please describe the improvements in the existing Resource Center(s) or the type of new Learning Resource Center.

If yes, please describe the benefits you have received as a result of access to these Learning Resource Centers.

12. Please provide any other comments related to the Partnership which have not been covered by the other qualitative questions.

4. What categories of educational or other materials were provided by the US partners to assist Partnership activities? Please list and describe these materials within the chart below, indicating if the materials were newly developed for the Partnership and the number and type of person (if known) the materials were distributed to (e.g., 25 Coalition members, 100 teens).

Name/Description of Materials Provided	Newly Developed (yes or no)	Number Distributed and Type of Recipient
1.		
2.		
3.		
4.		
5.		
6.		
7.		

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5. What seminars/workshops were provided **in the CEE** to assist Partnership activities?
Please list and describe the content of these seminars/workshops within the chart below, indicating the number and type of participant (e.g., 10 social workers, 25 Coalition members).

Name/Content of Seminars/Workshops Provided	Number and Type of Participant
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

--	--

6. What seminars/workshops were provided **in the US** to assist Partnership activities?
Please list and describe the content of these seminars/workshops within the chart below, indicating the number and type of participant (e.g., 10 social workers, 25 Coalition members).

Name/Content of Seminars/Workshops Provided	Number and Type of Participant
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

--	--

7. Please list below any inputs/resources which were **provided directly by AIHA** to assist Partnership activities (e.g., communication equipment, seminars).
8. Please list below any other inputs/resources which were provided to assist Partnership activities, which have not already been described in your previous responses.

OUTPUTS

1. Have there been changes in the relationship(s) between the CEE Partnership organization(s) and other CEE community institutions or agencies (e.g., new collaborations or communication improvements) as a result of Partnership activities? Please check:

_____ yes or _____ no **(If no, proceed to question #2)**

If yes, please describe these relationship changes.

2. Has a Community Health/Healthy Community coalition been formed as a result of Partnership activities? Please check:

_____ yes or _____ no **(If no, proceed to question #3)**

If yes, please indicate the type of community groups/members (e.g., Mayor's office, school, clergy, citizens) represented on the coalition.

If yes, please indicate how frequently the coalition meets (e.g., approximately once a month as a full coalition, with subcommittees meeting every other week).

OUTPUTS (continued)

3. Did community health assessment activities take place as a result of Partnership activities?

Please check:

_____ yes or _____ no **(If no, proceed to question #4)**

Did assessment activities include review of pre-existing data? _____ yes or _____ no

If yes, please indicate type and source of data:

Did assessment activities include administration of surveys/instruments? _____ yes or _____ no

If yes, please describe the surveys/instruments used below.

A.

Please check if this survey/instrument was either:

_____ newly developed _____ adapted or _____ used in the original format

B.

Please check if this survey/instrument was either:

_____ newly developed _____ adapted or _____ used in the original format

C.

Please check if this survey/instrument was either:

_____ newly developed _____ adapted or _____ used in the original format

Did assessment activities include convening focus groups? _____ yes or _____ no

If yes, please describe the type and number of individuals who participated in each group.

OUTPUTS (continued)

4. Was consensus established with key stakeholders on Community Health/Healthy Community program priorities? Please check:

_____ yes or _____ no **(If no, proceed to question #5)**

If yes, please list these program priorities.

5. Did Partnership activities lead to the development and implementation of community intervention strategies? Please check:

_____ yes or _____ no **(If no, proceed to question #6)**

If yes, please indicate the community intervention strategies which have been implemented.

6. Did Partnership activities lead to the development and implementation of a plan to monitor/evaluate the impact of Partnership activities? Please check:

_____ yes or _____ no **(If no, proceed to question #7)**

If yes, please provide an overview of the monitoring/evaluation plan.

OUTPUTS (continued)

7. Have there been any improvements in technical skills (e.g., instrument development, data analysis, how to monitor/evaluate intervention success) resulting from Partnership activities?

_____ yes or _____ no

If yes, please describe your evidence of these improvements.

8. Have any new reports/publications (by the CEE Partners) been developed as a result of Partnership activities?

_____ yes or _____ no

If yes, please describe these reports/publications.

9. Have there been any new regional or national policies or legislation concerning community health that resulted from Partnership activities?

_____ yes or _____ no

If yes, please describe the new policies and/or legislation.

OUTPUTS (continued)

10. Please describe any further examples of outputs due to Partnership activities which were not already noted above.

OUTCOMES/RESULTS

1. Is there evidence of measurable improvements in the health status of the community, region or country related to Partnership activities (e.g., decrease in the prevalence of adolescent drug use within the community; decrease in the use of hospital care/increase in the use of home care and hospice care by the elderly and chronically ill)?

_____ yes or _____ no

If yes, please describe the change(s), briefly note the inputs/outputs to which you attribute this change, and the source of your evidence.

APPENDIX D

QUALITATIVE QUESTIONS

HEALTH MANAGEMENT EDUCATION

Partnership Name: _____

Person Completing Form: _____

Position: _____ E mail: _____

1. Was the Partnership able to have an impact on the development of health management education opportunities in your institution or community? (check either yes or no) ____ yes ____ no

If no, what barriers (e.g., policy issues at a higher level, problems in communication) prevented the Partnership from having an impact on the development of health management education opportunities? (Describe, then proceed to question #2)

If yes, how would you describe the impact? (Please identify the specific programs/activities which had an impact).

If yes, to what extent did these Partnership activities respond to the needs identified by your institution or community?

If yes, what barriers, if any (e.g., policy issues at a higher level, problems in communication), prevented Partnership activities from having a greater impact? Were there limitations in funding, personnel, technology, etc. which prevented implementation of specific practices/policies learned through the Partnership? (Please describe)

2. In your opinion, did exposure to the US system of health management education help transform attitudes and practice within the CEE? (check either yes or no) ____yes ____no

If no, what barriers prevented the Partnership from helping to transform attitudes and practice within the CEE partner institution(s)? (Describe, then proceed to question #3)

If yes, what changes did you observe in attitudes and practice?

If yes, identify the specific activities which helped to transform attitudes and practice.

If yes, how did these activities help to transform attitudes and practice?

If yes, what barriers, if any, prevented greater progress in transforming attitudes and practice?

3. Was it more effective to visit the US institution(s) or was it more effective to have US professionals visit your site(s)? Please select one then explain your answer.
____ visit the US ____ have the US visit CEE partner

Explanation:

- 4a. In your opinion, did exposure of US professionals to CEE partner institutions effect their approach to their work in the US? (check either yes or no) ____ yes ____ no

If no, what do you think prevented this exposure from having any effect? (Describe, then proceed to question #4b.)

If yes, in what manner did this exposure have an effect? (Identify some specific examples).

- 4b. In your opinion, did the partnership encourage changes in the outlook of the US delegates toward their health management education system? (check yes or no) ☐ yes ☐ no

If yes, what changes in outlook occurred?

- 5a. Could the US partner improve the level and form of assistance provided to the CEE partner? (check either yes or no) ☐ yes ☐ no

If yes, what improvements would you recommend?

- 5b. Please describe any suggestions you have for how AIHA might improve the working relationships between the US and their CEE Partners.

6. Will activities/programs developed through the Partnership (improvements made) be able to be sustained when funding ends? (check either yes or no) ☐ yes ☐ no

If no, what prevents their continued existence? (Describe, then proceed to question #7)

If yes, what improvements will continue?

If yes, how will they be sustained?

If yes, what improvements may not be continued?

If yes, what prevents their continued existence?

7. Will the Partnership **relationship** be able to be sustained when funding ends? (check either yes or no) ☐ yes ☐ no

If no, what prevents the continuation of this relationship? (Describe, then proceed to question #8)

If yes, to what degree will the relationship continue? (describe any differences)

If yes, how will you accomplish this - what means will you use to sustain the relationship?

- 8a. Please describe the benefits you have received as a result of participating in AIHA conferences, meetings, workshops and/or study tours.

- 8b. How might these AIHA conferences, meetings, workshops and/or study tours be improved?

9a. Did your Partnership form any relationships with other Partnerships? ☐ yes ☐ no

If no, what prevented you from forming relationships with other Partnerships? (Please describe then proceed to question #9b.)

If yes, what other Partnerships does your Partnership communicate with most frequently?

If yes, what benefits did your Partnership receive (e.g., lessons learned from other Partnership s experiences) through your relationships with other Partnerships? Please be specific.

9b. Please describe any suggestions you have for how AIHA might improve relationships between Partnerships.

10a. Please describe the benefits you have received as a result of access to new technology (e.g., the Internet) or information resources (e.g., *CommonHealth*) introduced by AIHA.

10b. How might AIHA improve the process of providing access to new technology and information?

11. Did Partnership and/or AIHA activities lead to improvements in existing information Resource Centers or the development of new Learning Resource Centers? (check either yes or no) ☐ yes ☐ no

If no, what prevented the improvement in/development of Learning Resource Centers?

If yes, please describe the improvements in the existing Resource Center(s) or the type of new Learning Resource Center.

If yes, please describe the benefits you have received as a result of access to these Learning Resource Centers.

12. Please provide any other comments related to the Partnership which have not been covered by the other qualitative questions.